

Trial Hearing
WITNESS: CAR-D20-P-0001

(Open Session)

ICC-01/05-01/13

1 International Criminal Court
2 Trial Chamber VII - Courtroom 1
3 Situation: Central African Republic
4 In the case of The Prosecutor v. Jean-Pierre Bemba Gombo, Aimé Kilolo Musamba,
5 Jean-Jacques Mangenda Kabongo, Fidèle Babala Wandu and Narcisse Arido - ICC-01/05-01/13
6 Presiding Judge Bertram Schmitt, Judge Marc Perrin de Brichambaut and
7 Judge Raul Pangalangan
8 Trial Hearing
9 Thursday, 10 March 2016
10 (The hearing starts in open session at 9.01 a.m.)
11 THE COURT USHER: All rise.
12 The International Criminal Court is now in session.
13 PRESIDING JUDGE SCHMITT: Good morning everyone.
14 Court officer, could you please call the case.
15 THE COURT OFFICER: (Interpretation) Good morning. Yes, Mr President. Situation in
16 the Central African Republic in the case of The Prosecutor versus Jean-Pierre Bemba Gombo,
17 Aimé Kilolo Musamba, Jean-Jacques Mangenda Kabongo, Fidèle Babala Wandu and Narcisse
18 Arido, in the case reference ICC-01/05-01/13.
19 And for the record, we are in open session.
20 PRESIDING JUDGE SCHMITT: Thank you very much. The appearances, please.
21 MR VANDERPUYE: Good morning, Mr President. Good morning, your Honours. Good
22 morning everyone. Today the Prosecution is represented by Ruth Frolich, seated to my right;
23 Sylvie Wakchom, seated to my left; Sylvie Vidinha, seated behind me and to my left. I'm
24 Kweku Vanderpuye. Good morning again.
25 PRESIDING JUDGE SCHMITT: Thank you very much.

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1 For the Defence, please.

2 MR DJUNGA: (Interpretation) Good morning, your Honours. The Kilolo Defence team
3 has not changed, the same composition.

4 MR TAKU: May it please your Honours, I appear for Mr Arido, who is present here today,
5 and with my learned friend and colleague, Beth Lyons, and Mr Michael Rowse, who is our
6 case manager.

7 MR KILENDA: (Interpretation) Good morning, your Honours. Ms Adriana-Marie
8 Manolescu, case manager, has joined us today. The rest of the team remains unchanged.

9 MR GOSNELL: Good morning, your Honours. Christopher Gosnell representing
10 Mr Mangenda to my left, assisted by Ms Rita Yip.

11 MS TAYLOR: Good morning, Mr President, your Honours. Melinda Taylor on behalf of
12 Mr Jean-Pierre Bemba. I'm appearing today with Ms Yuping Liu, Ms Natacha Lebaindre and
13 Josh Bishay. Thank you.

14 PRESIDING JUDGE SCHMITT: Thank you very much.

15 The Chamber will now hear testimony of Witness D20-1. This is Dr Harrison.

16 I welcome you in the courtroom, Dr Harrison.

17 You are going to testify before the International Criminal Court as you are well aware
18 of. On behalf of the Chamber and not only personally from the Presiding Judge, I
19 welcome you.

20 The Chamber has been established as you also have heard yet to try the case of the
21 Prosecutor against Mr Jean-Pierre Bemba Gombo and others. You are called, like
22 any expert witness, to assist us in our search for the truth.

23 There is a card, Dr Harrison, in front of you, or there should be or you are given it
24 with a solemn undertaking to tell the truth. Could you please read this card aloud?

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1 THE WITNESS: I solemnly declare that I will speak the truth, the whole truth and nothing
2 but the truth.

3 PRESIDING JUDGE SCHMITT: Thank you very much, Dr Harrison. Now I have to
4 address before we start with your testimony a few practical matters that you please bear in
5 mind when giving your testimony, because this is a special situation when you compare it, for
6 example, to domestic environments, legal environments.

7 Everything we say here in the courtroom is written down and interpreted into
8 English and French. It is, therefore, important to speak clearly and to speak at a
9 moderate or rather slow pace. Many parties, participants and also the Chamber has
10 sometimes problems with that. We want to make sure that your words are
11 understood by the interpreters. That's the reason for it.

12 Please speak into the microphone and only start speaking when the person asking
13 you the question has finished. To allow for the interpretation, everyone has to wait a
14 few seconds before starting to speak. So I recommend that when the lawyer has
15 asked his or her question, please count to three before giving the answer.

16 If you have any questions yourself, what can happen, raise your hand so we know
17 you wish to say something, we will then give you the opportunity to speak.

18 I trust that you have understood that, Dr Harrison.

19 THE WITNESS: Yes, I have. Thank you.

20 PRESIDING JUDGE SCHMITT: Thank you very much. Then we will start your testimony.
21 Mrs Taylor, you have the floor.

22 QUESTIONED BY MS TAYLOR:

23 Q. Good morning, Mr Witness. Could you please give your full name for the record?

24 A. My full name is Philip Thomas Harrison.

25 Q. And what is your current occupation?

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1 A. I am a forensic consultant specialising in the analysis of speech, audio and recordings.

2 Q. And when did you start working in this field?

3 A. I began working in the field in 1997 as a case work assistant junior role for four years,
4 and then in 2001 I became a forensic consultant in my own right producing my own reports
5 and my own evidence.

6 Q. Are you affiliated with a firm?

7 A. Yes. I work for a company called JP French Associates, who are based in York in
8 England. They're the longest established independent laboratory in the UK dealing with
9 speech and audio and these matters.

10 Q. Dr Harrison, you said it's the longest established firm. Can you recall when it was
11 established?

12 A. Approximately 30 years ago.

13 Q. What is your current role in the firm?

14 A. I'm a full-time forensic consultant and also a director within the company.

15 Q. Can you please tell me what academic qualifications you have?

16 A. Yes. I have an undergraduate degree in acoustical engineering, that is the physics or
17 the study of sound and vibration and associated areas. I have a master's degree in phonetics
18 and phonology, phonetics being the study of speech sounds and speech production, and
19 phonology being how those sounds are combined into creating languages. And I also have a
20 Ph.D. in linguistics, which was concerned with technical aspects of measuring resonances in
21 speech.

22 Q. Just regarding your study of phonetics and phonology, you stated that this is how
23 different languages are constructed. Is it possible to identify speech patterns or rules of
24 conversations in different languages?

25 A. Different languages will have different structures in terms of syntax and grammar, but

1 in general, people will conduct conversations in a similar way regardless of the language.

2 Q. Could you give me an example of such a similarity?

3 A. Exactly as we are doing at the moment, we're taking it in turns to speak, I'm waiting for
4 you to finish speaking and then I speak; you're waiting for me to finish, and then you speak.
5 Slightly different because we have interpreters, so it's slightly unnatural. But there are
6 essentially unwritten rules which humans learn, pick up and adapt as to how to conduct a
7 conversation.

8 If people spoke over the top of each other all the time, that wouldn't be a very
9 productive means of having a conversation. So we introduce subtle cues in our
10 speech which might not always be picked up on, but there are rules by which we
11 conduct a conversation.

12 Q. What languages do you speak?

13 A. I speak English as my mother tongue, and I have limited competence in French. I
14 wouldn't propose to conduct my testimony in French or be questioned in French, but I can
15 survive in France.

16 Q. Well, Dr Harrison, I certainly couldn't question you in French.

17 With a language you don't speak at all such as Lingala, would you be able to match
18 phonetic sounds of Lingala to the written form of these words if they're in a Roman
19 alphabet?

20 A. It would be possible. To some extent it would depend how the mapping of the sounds
21 to the written characters were. Some languages have a more straightforward mapping
22 between the Romanised orthography and what is spoken. English doesn't necessary have
23 those same kind of rules, which is why it can be difficult for foreign language learners to learn
24 English.

25 But from a personal perspective, it's not like it would be written in a script, like

1 Arabic or Chinese characters where there would be no possibility of being able to
2 match what was spoken with the written words on the page.

3 Q. And with your limited French, if you hear a French word, are you able to identify the
4 written version of the French word?

5 A. Yes, I would find that much more straightforward and using words which I did know as
6 reference points within the text.

7 Q. Have you ever authored an expert report for use in domestic court proceedings?

8 A. I have many, yes.

9 Q. Do you recall how many times approximately?

10 A. I state in my CV I've worked on over a thousand cases. That concerns involvement
11 from simply transferring recordings, assisting colleagues, all the way through producing my
12 own written reports and giving testimony in court. I think perhaps a best estimate would be
13 between 30, 40 cases per year, which would be written as my own cases.

14 Q. And if I could just clarify, when you mention 30 cases, is that in which you've authored
15 a report or in which you've testified as an expert or both?

16 A. It would be 30 cases per year approximately where I had authored a report. At present
17 in my 18 years I've given evidence on 21 occasions, so oral testimony, but my written reports
18 would always be submitted into evidence and either be agreed or just be read or considered
19 and there would be no challenge or no requirement for me to attend court to give evidence.

20 Q. Can you briefly describe the subject matter of these reports or your expert testimony?

21 A. Yes. They cover a range of work which we undertake at the firm. One of those would
22 be the enhancement of recordings. So trying to clean them up, make them sound better,
23 make speech more intelligible by processing the recordings, removing background noise,
24 other intrusive sounds. So the ultimate product of that would be a disk with an enhanced
25 version of a recording on and a statement setting out the work that I'd undertaken.

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1 I also do transcription work, so orthographic transcription, writing down what's said
2 in a recording. So the product of that would be an evidential transcript, which
3 would again be produced as an exhibit to go before a court with a report.
4 I also work on the authenticity of recordings, so examining recordings for any signs of
5 editing, tampering, addressing questions of whether I've been presented with an
6 original recording or a copy recording, if there is some technical fault or problem
7 which has caused a recording to appear in a particular way, and I would produce a
8 report detailing the examinations that I've undertaken, any tests or experimental
9 recordings, any comparisons I'd made, and that would go before the court.

10 Also, miscellaneous cases, cases involving identifying gunshots in recordings, how
11 many shots were fired, how many guns were fired, identification of sounds within
12 recordings, assessment of lay witness evidence, a case involving coughing within a
13 TV game show. So lots of other more unusual cases which require a bespoke
14 approach that don't fit nicely into the earlier categories, and also to a lesser extent
15 speech comparison analysis, so giving a view on the identity of a speaker within a
16 recording.

17 Q. Have you been involved as an expert before an international court or tribunal
18 previously?

19 A. I assisted my colleague, Professor Peter French, in the war crimes tribunal for the former
20 Yugoslavia. So I assisted, I believe I co-authored the report, but he actually gave evidence at
21 the court here in The Hague.

22 Q. Do you recall which case that was?

23 A. I think that we acted in a couple of cases. Milosevic was one of them, Karadzic was
24 another, and a third I can't recall, sorry.

25 Q. And when you became involved in the, for example, the Milosevic case, do you recall

1 who appointed your colleague and yourself?

2 A. I think it was the Court itself. We were Court instructed rather than by either
3 Prosecution or Defence.

4 Q. And what was the field of expertise you were requested to produce a report in that case?

5 A. In those cases I personally worked on authenticity aspects. As I said, were the
6 recordings genuine, were they original, had they been edited? But I think we also as a
7 company, my colleague addressed issues of identification of the voices. So were the people
8 who were speaking in the recordings who the Prosecution or the Court claimed that they
9 were.

10 Q. Have you been requested to provide an expert opinion in relation to intercepts or
11 recordings which are not in English?

12 A. Yes. A number of cases which we're instructed to work on are not in English.

13 Q. And in these cases, were you provided interpretation or translation of the recordings?

14 A. It very much depends on an individual case. Some cases we may receive nothing.
15 Perhaps in an enhancement case we would just be provided with the recordings. If it was a
16 speaker comparison case or authenticity, we might be given a transcript and a translation, but
17 not always.

18 Q. And in these cases, were you able to conduct a meaningful forensic analysis even
19 though the subject matter was in a different language?

20 A. Yes, in the cases we've worked on. In most cases, however, we would work with a
21 native speaker of the language involved. This will be someone who we would personally
22 select someone who had qualifications in linguistics, phonetics, phonology, the kind of fields
23 which we and I have qualifications in, and we would normally work with them at the
24 laboratory. They would, depending on the type of case, conduct certain analyses on their
25 own. They would be given instructions, but we would also work collaboratively with them.

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1 Q. I'd just like to address the methodology of your report now. If we could bring up
2 CAR-D20 -- actually, sorry.

3 Mr President, your Honours, I would respectfully request permission to be able to
4 play the evidence through our laptop so that we can identify extracts more easily.

5 PRESIDING JUDGE SCHMITT: We don't have any problems with that. You can do that.

6 MS TAYLOR: Thank you very much.

7 So if we could pull up CAR-D2 -- it's tab 1 in the binders, CAR-D20-0006-1244 at 1245.

8 Q. Dr Harrison, is this your signature?

9 A. Yes, it is.

10 Q. Could we turn to page 1262. Is this your signature as well?

11 A. It is, yes.

12 Q. Did you author this report?

13 A. I did, yes.

14 Q. Do you recall what instructions were given to you in connection with the preparation of
15 this report?

16 A. Yes. They're set out at the start of my report. If I may refer to them? In general
17 terms, I was asked to consider the recordings provided for issues of synchronisation. There
18 was a concern that there were problems with the synchronisation of the two speakers in the
19 left and the right channels, and I was asked to examine them and provide comment.

20 Q. Did you consider that the instructions which were given to you by the Defence fell
21 within your expertise?

22 A. I did, yes, if not, I wouldn't have accepted the case.

23 Q. And why is it that you consider that they fell within your expertise?

24 A. Because these were recordings of speech of conversations, and I was instructed on a
25 technical matter to assess the problems of synchronisation between the two parties.

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1 Q. Did the instructions change in any manner after you were first requested to prepare a
2 report by the Defence?

3 A. Not in any substantial way. Originally the first contact was via a telephone
4 conversation where I understood the basics of the problem and the questions that the Defence
5 were trying to get to the bottom of what I was being asked to do, and then in subsequent
6 communications and the final written version of the instructions, the substance stayed the
7 same.

8 Q. Can you recall what materials were provided to you in order to perform this analysis?

9 A. Yes. I was provided with a total of 28 audio recordings, the associated transcripts and
10 French translations. I also requested English translations of some of the recordings, and I
11 was provided with four of those. I also requested the technical report which had been
12 prepared by the company responsible for the recording equipment and the associated request
13 for that and also the written position of the Prosecution in relation to the recordings. I think
14 that's everything.

15 Q. Did you request any other materials which were not provided to you?

16 A. No. That was all I asked for.

17 Q. And when you were preparing your report, did the Defence ask you to disregard any
18 information?

19 A. No, they didn't.

20 Q. Did the Defence ask you to exclude any results which were relevant to your analysis?

21 A. No, they didn't.

22 Q. Did the Defence seek to influence the content of your report in any way or your
23 independence when preparing the report?

24 A. No, they didn't.

25 Q. I'm just going to turn now to the method of analysis. Do you recall how many

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1 recordings you analysed?

2 A. Twenty-eight.

3 Q. Did you receive them at the same time?

4 A. No. I received them essentially in four batches. Would you like me to elaborate on
5 the number and when?

6 Q. If you would like to do so. I was going to ask why batches were sent to you at different
7 times, but if that fits into your --

8 A. Yes. The first, one recording was provided on the same day as the initial contact on 31
9 December, a further 13 were provided on 5 January, one further recording on the 6th, and
10 then a further 13 on 15 January.

11 Q. And was there a reason why they were sent to you at different times or in different
12 batches?

13 A. Yes. The initial recording on the date of the first contact was just an example recording
14 to provide me with insight into what the problem was so I could be clear what the nature of
15 the issue was. The first batch then on the 5th was the initial set of recordings which I was to
16 consider. I'm not entirely clear why an extra one appeared the next day, but I think that was
17 just missed off from the first batch.

18 Having then conducted some of my examinations, I requested further recordings on
19 the 15th, which were then made available to me on the 15th.

20 Q. So you requested further recordings, and in the end you had 28 recordings. Did you
21 consider that this was a sufficient number for you to respond to the instructions?

22 A. Yes, I did, given the nature of my instructions and the findings I made during the
23 examinations, which all of the recordings I'd encountered had suffered from the problem,
24 potentially I could have had another 10, another 20, 15, but given that this was a limited
25 exercise, I wasn't being asked to consider every recording, I was happy that the material I had

1 examined allowed me to demonstrate and talk about the fact that the recordings clearly
2 suffered from problems.

3 Q. And what methods did you use to analyse the recordings?

4 A. Two methods. First is critical or analytical listening, so not just listening for what's
5 being said, but how things are said, paying attention to other features of a recording which
6 may normally go unnoticed, things in the background, timing of events. And this was also
7 done in collaboration -- in conjunction, sorry, with the second kind of analysis, which I've
8 referred to as acoustic testing, which is producing a visualisation of the recording which
9 allows me to see where speech occurs in time within the recordings and also to make
10 measurements of time and location within that recording.

11 Q. I'm just going to address acoustic testing. Did you use this form of testing for all the
12 recordings which were sent to you?

13 A. In terms of the waveform examination or waveform analysis, yes, I did. All recordings
14 were subjected to that analysis.

15 I've also mentioned in the report another kind of acoustic testing, spectrographic
16 analysis, which is a different kind of visualisation of the contents of an audio signal,
17 which shows the distribution of energy across different frequencies within the
18 sounds.

19 I conducted that kind of analysis on a very limited number of recordings as a test to
20 see if there was anything which that kind of examination would reveal which the
21 waveform analysis wouldn't, and I didn't find anything which was of assistance
22 within that, so I restricted that to a very small number of recordings.

23 Q. When you were using acoustic testing, for example, the time amplitude and the
24 waveform analysis that you described, does the specific language of the recording impact on
25 your analysis?

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1 A. Not in that type of examination, no. It's a purely visual representation of the signal.

2 Q. Do you recall what tools you used for this acoustic testing?

3 A. Yes. The main tool I used is called Sony Sound Forge. It's an audio recording editing
4 play-back piece of software.

5 Q. Do you recall what else you used, if you used any other hardware or software?

6 A. Yes. The other software is known as Praat. It's a speech, more specifically speech
7 analysis software, and this was used for the spectrographic analysis.

8 Another piece of software called dBpoweramp, which was used to extract technical
9 information about the recordings, such as their format and duration. And then the
10 hardware, physical hardware used were normal PCs with sound cards, a headphone
11 amplifier and a pair of professional headphones.

12 Q. Regarding the software that you described, have you used this software in other cases in
13 which you've appeared as an expert witness?

14 A. Yes. I used the software on a daily basis and have done for probably 17 of the 18 years
15 I've been working. It's our standard go-to workhorse piece of software.

16 Q. And would the type of software that you used for this analysis have impacted on the
17 findings?

18 A. Not if it was comparable software. There are other kinds of software which can be
19 used for replaying audio recordings, things like Windows Media Player, other tools built into
20 computers which will just simply replay a recording that won't give you the kind of
21 additional visual information which software like Sound Forge will do, which provides this
22 waveform display. So if you were using another piece of software which also had the same
23 waveform type display, then it would not matter which software was used.

24 Q. You mentioned previously that you also conducted analytical or critical listening, and
25 you explained what that was. Could you also explain what is the difference between a

1 layperson listening to recordings and an expert using these critical listening techniques to
2 analyse a recording?

3 A. A layperson would generally focus on the content of a
4 recording and not be as attuned to other features which by training and experience an expert
5 would turn their focus and attention to, so things like intonation, patterns, timing of
6 interactions, potentially issues with background noise, background sounds.

7 Q. Is this a typical method for conducting an expert analysis of voice recordings?

8 A. It would depend on the specifics of the case. If it was an authentication analysis, then
9 critical listening, analytic listening is a very important part of that. You are listening for
10 things in the recording, features which might suggest that editing or tampering had taken
11 place, so unnatural features of speech, unnatural breaks, foreshortening of words, unnatural
12 rhythmic features, unnatural intonation patterns. So there are some parallels there.
13 If you were talking about a speaker comparison case, it would again be analytical
14 listening, but one would be focusing on the specifics of how someone pronounced
15 and produced individual vowel and consonant sounds to build up a profile of their
16 speech patterns. So it's different aspects of critical listening which would be applied
17 to the specifics of a case and the instructions and the work being done.

18 Q. Previously you testified that you requested English translations and you received four
19 English translations. Can you explain how you used the English translations in your
20 analysis?

21 A. The English translations were used for identifying content or topics within the
22 recordings which may have been displaced in time. So I was looking for conversation topics
23 which occurred in the two speakers but very far apart, and also to confirm my impression
24 gained from the French as well in relation to endings of phone calls.

25 Q. To what extent did you rely on the English translations in order to reach your ultimate

1 findings in the report?

2 A. I wouldn't say I relied on them in order to reach my conclusions. If I hadn't had the
3 transcripts -- the translations, sorry, my conclusion would have remained the same. They
4 were able to assist me in providing examples of problems with the recordings. So I was
5 more confident in the examples which I could produce and I could also explain them, the
6 words spoken in English rather than relying on the French translations.

7 Q. So when you used the English translations to analyse content, did you rely exclusively
8 on that as a transcript of the recording?

9 A. I used the translations more to locate topics which may be repeated but at separate
10 different times from the two parties within the recordings.

11 Q. Do you recall citing line numbers for the transcripts of recordings in your report?

12 A. Yes, I do.

13 Q. Do you recall if the English translations had line numbers?

14 A. I don't think they did.

15 Q. Would you like to refresh your memory or would you --

16 A. Yes, yes.

17 Q. Tab 3.4 is an example.

18 A. Yes, I've just turned to that one. And no, there are no line numbers.

19 Q. So when you inserted line numbers in your report, do you recall which version of the
20 transcripts you obtained these line numbers from?

21 A. As I recall, they relate to the original transcripts rather than the French translations or
22 the English translations.

23 Q. Just to be 100 per cent clear, when you say "the original transcripts," do you mean the
24 ones which are a mixture of Lingala and French?

25 A. Yes, those are the ones I mean.

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1 MS TAYLOR: Mr President, your Honours, I'm proposing to play some extracts of
2 recordings. I would request that the translation not be transmitted through the headphones
3 so that we can hear the original form of the recording which was what was analysed by the
4 witness.

5 PRESIDING JUDGE SCHMITT: That makes sense, yes, indeed.

6 MS TAYLOR: I would also request that we go into private session to play these extracts, and
7 that as soon as I've finished playing the extracts, we can then go into public session, and then
8 the Defence can submit proposals for redactions for anything in between, but it might be very
9 cumbersome to go in and out of private session otherwise.

10 PRESIDING JUDGE SCHMITT: Then we go into private session.

11 (Private session at 9.45 a.m.)

12 (Redacted)

13 (Redacted)

14 (Redacted)

15 (Redacted)

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- 18 (Redacted)
- 19 (Open session at 10.02 a.m.)
- 20 THE COURT OFFICER: We are in open session, Mr President.
- 21 PRESIDING JUDGE SCHMITT: Thank you very much.
- 22 Dr Harrison, the question arose at the Bench, what is meant by when you speak of
- 23 "alignment" or "misalignment"? Could you explain this for a layperson, to put it this
- 24 way, what you mean when you speak of "alignment" as I said or "misalignment"?
- 25 THE WITNESS: Alignment would be where the recording reflected the ordering of speech

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1 as it occurred at the time the conversation actually occurred. So one would expect a turn of
2 speech from person A, then person B would speak, then person A and B and so on as a
3 normal conversation would occur. And if a recording was unproblematic, if there were no
4 issues with the recording, then that would be reflected in a recording of that conversation.
5 So in that sense, the speech turns are aligned that it's A-B, A-B.

6 When I speak of misalignment, that patterning that one would expect is not present as
7 I talked about when the display was on the screen. So particularly in the right-hand
8 half of the screen, you see in the top, in the left channel there is speech occurring, but
9 there are no responses, no further questions at those times in the right-hand channel,
10 there is just blank.

11 So there were at the time the telephone call took place, there was a back and forth
12 during the entire duration of the call. There was no suggestion that there were
13 problems with the calls themselves when they were taking place. It's how they have
14 been turned into recordings, how the recordings were made which has resulted in
15 this misalignment that I'm referring to of speech which would have occurred at a later
16 time actually occurring much earlier on in the recording. I hope that makes it clear.

17 PRESIDING JUDGE SCHMITT: I think I've understood. So when you speak of
18 misalignment, this affects the sequence of the conversation, would that be correct, or the
19 sequence in what things during conversation have been said, or is this a misunderstanding?

20 THE WITNESS: The sequence in a relative sense from person A to person B to person A.
21 As far as I'm aware and, again, I don't think there's been any suggestion that there is any
22 material missing from the recordings. So if you were to take just person B, all of their
23 utterances, all of their speech occurs sequentially. So what they said at the beginning of the
24 call is at the beginning of the recording, and what they said at the end of the call is at the end.
25 Material hasn't been moved around. But relative to between A and B, so when A asks a

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1 question, the speech from B doesn't appear afterwards.

2 PRESIDING JUDGE SCHMITT: So I think I have understood it now. So but to repeat it for
3 myself, so what is affected is when we are looking at the different channels that we cannot say
4 if the sequence of the speakers is correct. But when we talk about one speaker, we can say
5 that this is sort of consistent then. If you look at one channel, for example, if you have two
6 participants in a conversation, would you say then that what is ascribed to one speaker has
7 been said, or can't we say that?

8 THE WITNESS: That assessment is correct as far as I've been able to tell. I haven't been
9 able to do any tests with the recording equipment, but there has been no suggestion that
10 material is missing. So if you were to consider each speaker in isolation, then you have a
11 record of what they said. So you have essentially just one side of a telephone conversation
12 that the timing is wrong, but the spoken contents is correct. I've found nothing to suggest
13 that's not the case.

14 PRESIDING JUDGE SCHMITT: Thank you very much.
15 And furthermore, I think we have used this intermediary interrogation by the
16 Presiding Judge to fix it?

17 MS TAYLOR: Yes. Thank you very much, Mr President.

18 PRESIDING JUDGE SCHMITT: So then please continue.

19 MS TAYLOR:

20 Q. So just to recapitulate, we're going to play the same recording from the 2 minute and 10
21 second mark for 40 seconds.

22 PRESIDING JUDGE SCHMITT: We are in open session. Is this a problem?

23 MS TAYLOR: Yes. We should change to private session.

24 PRESIDING JUDGE SCHMITT: Then we go into private session.

25 (Private session at 10.09 a.m.)

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11 (Open session at 11.24 a.m.)

12 THE COURT OFFICER: We are in open session, Mr President.

13 PRESIDING JUDGE SCHMITT: Please continue, Dr Harrison.

14 THE WITNESS: Thank you. The technical problem itself was identified by the Bumicom
15 company who were responsible for the audio recording equipment. So this isn't work which
16 I've undertaken or testing that I've done myself. However, the general description which
17 they've given and the manifestation of the problem within the recordings, I have no reason to
18 question what they found as the source of the problem and then the manner in which they
19 fixed it and that it has not since reoccurred as a problem.

20 The problem itself is associated with something called the "voice activity detector,"
21 acronym VAD. And in telecommunications, mobile phones, in order to save on the
22 amount of information which has to be transmitted, telephone equipment will detect
23 when speech is occurring. So the voice activity detector is also a speech detector.
24 So the system knows when you're talking and when you're not talking. And to save
25 on things like battery life in mobile phones, the number of simultaneous calls which

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1 can happen on a mobile phone network, the telephone will only transmit when there
2 is speech and will not transmit when there's no speech.

3 And a similar process has occurred in the telephone equipment which has been
4 installed at the detention facility where these recordings were made. So when the
5 call comes in, the equipment is making some assessment of when there is speech and
6 when there is no speech, and the system differentiates between these two types of
7 material which are coming into the system in the phone call.

8 And what appears to be the problem is that the system, when it's told that there is no
9 speech occurring, it uses something called "comfort noise." It generates some
10 artificial noise so it doesn't sound like the call has been dropped. So when you were
11 having the phone call, you would hear some kind of hissing noise or other
12 background sounds, and this is an artificial sound. So the recording has to deal with
13 the speech and also this artificial comfort noise.

14 And what appears to have happened is that in the recording, it's only recorded the
15 speech sections and not done anything with the comfort noise. So what we've ended
16 up with is essentially a backloading of the speech segments one after the other in time
17 without the intervening segments of silence, which is why you see at the very
18 beginning that the speech all appears bunched up together.

19 There are some sections of silence, and there are some of slightly different issues in
20 other recordings; but as a general summary of the problem and an account for how
21 the speech has appeared that way, the recording system has not been recording in
22 realtime because it's basically a computer system which is collecting all these bits of
23 speech information that are coming in, and it's just accumulated the speech without
24 correctly accumulating the silence in between those utterances.

25 I hope that that explanation is clear and goes some way to explaining why we see

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1 what we see on the screen.

2 PRESIDING JUDGE SCHMITT: And what would that mean for my question that I asked
3 initially? I know I could give the answer myself, but you are the expert.

4 THE WITNESS: In response to your question is that the alignment, which then appears
5 within the recordings, is essentially a chance alignment when this problem has occurred in the
6 recording. So you could find sections after, for example, the 30 seconds of almost continuous
7 overlap. There may well be sections after that where what appears to be a normal A-B, A-B
8 exchange, again, occurs.

9 But because we know already that there's an alignment synchronization problem, the
10 appearance of a coherent conversation is not a reflection of something which occurred
11 at the time. It's a chance accumulation of how the speech has stacked up, and it
12 appears that it makes sense or is coherent or could be considered coherent, but there's
13 no suggestion that that pattern of utterances, that sequence of speech, actually
14 occurred at the time the conversation was made.

15 PRESIDING JUDGE SCHMITT: And when it comes to this, as you put it, this unnatural
16 simultaneous speech, the portions of this simultaneous speech or these overlapping speeches,
17 which are two persons speaking, are not going to resurface at some point in time of the
18 conversation without overlapping?

19 THE WITNESS: No. I found no instances where a portion of the speech was repeated or
20 suddenly the problem corrected itself that the computer caught up with itself and then
21 suddenly inserted 30 seconds, a minute 60 seconds of silence or it was stored up somewhere,
22 and then suddenly it was corrected. No. I found that the problem, once it had occurred, it
23 was -- it was there in the -- in the recording.

24 JUDGE DE BRICHAMBAUT: (Interpretation) Thank you for these.

25 Thank you for these clarifications. If I've understood you correctly, the causes for

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1 the phenomenon that we're looking at together are technical, and they had to do with
2 the characteristics and features of the recording equipment that was used. Are there
3 any solutions, any corrective measures that can make it possible to repair the
4 misalignment problem? Is there sufficient basis in the recording to restore the
5 normal elements of speech as they should have been or ought to have been recorded?
6 Thank you.

7 THE WITNESS: I touched on this issue before a little bit. In the -- sorry. I'll backtrack.
8 Yes, your assessment of the problem was correct that this is technical in nature and
9 caused by the recording equipment itself.
10 The report produced by Bumicom says that they found no technical means by which
11 the recordings could be or, sorry, the conversations could be reconstructed from the
12 recordings. Myself, in my own examinations and analysis, I found no technical
13 means by which the conversations could be reconstructed.
14 I did mention the possibility that if there had been speech from party B in the
15 background very quietly in party A's recording, if there had been some leakage of the
16 speech, that would have been a means by which it could have been possible to
17 independently do that, but I found no -- just one very brief instance, so no technical
18 means by doing it.
19 If there is a very unambiguous portion of the conversation; for example, the question
20 "Did you go to the shops today?" and a response, "Yes, I went to the shops today,"
21 that could be seen as an ambiguous exchange of a question and answer. But
22 anything else where there's some potential ambiguity or an answer to a question may
23 be positive or negative or an ordering of who initiated a conversation topic, there
24 would potentially be lots of different ways that sections of conversation could be
25 aligned, and I'm not sure -- if it was an exercise to be undertaken, it would be

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1 something which both parties and the Court and everybody would need to agree was
2 a reasonable interpretation or a reasonable reconstruction. But because there's no
3 reasoned, necessarily, or technical way on which to reconstruct them without that
4 topic or something which can be agreed on, I think it would be very difficult.

5 PRESIDING JUDGE SCHMITT: Mrs Taylor, you have long waited now standing all the time,
6 but please continue now.

7 MS TAYLOR: Thank you very much, Mr President.

8 Q. Earlier you said that this speech component in the right channel, which we can't see on
9 the line at the end, that it was bunched up to the earlier part of the recording. Would this
10 have impacted on the alignment of the two channels during the earlier part of the recording?

11 A. Yes. That's the effect that there is on the recording, that there's misalignment from the
12 start and throughout the recording.

13 Q. If there's a misalignment of, say, 2 minutes and 30 seconds at the end of the recording,
14 will there be a consistent misalignment of 2 minutes and 30 seconds between the two channels
15 throughout the recording?

16 A. No. The extent of the misalignment will vary through the duration of the recording.
17 So I mentioned at the start approximately 8 seconds there's an example I give in my report
18 from this recording where there's an exchange relating to somebody taking pity on somebody.
19 And if I recall, the alignment at that section was around 1 minute and 40 seconds. So the
20 alignment isn't -- the misalignment isn't constant and isn't fixed, and that's due to the nature
21 of the cause of the problem itself, as I explained, that the silences, the comfort noise hasn't
22 been included, and so it's relating to how much speech actually occurs and how the turns in
23 the conversations occurred in the -- at the actual time.

24 Q. So if the extent of the misalignment isn't inconsistent and can vary throughout the
25 recording, without analyzing the content is there a way to identify with objective certainty the

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1 actual order of the misaligned speech in realtime?

2 A. There's no technical means by which that can be done, so it would come down to
3 decisions based on the spoken content, and it would be an attempt to reconstruct based just
4 on the content.

5 Q. Just before you mentioned some of the content of this recording, some of the wording in
6 it, do you recall receiving an English translation of this recording?

7 A. Yes, I did receive an English translation.

8 Q. Could you please look at tab 3.4 of your binder? This is CAR-D20-0006-1524. Does
9 this appear to be the English translation that was sent to you?

10 A. Yes.

11 Q. Could you just turn to tab 3.3? And if we could look at CAR-D20-0006-1041 at 1042_1,
12 and if you turn to, I think, the second page in yours, you can see that this is a corrected
13 English translation and that there were errors in the version that was sent to you.

14 A. Yes.

15 Q. Would these errors have impacted on your analysis of the recording?

16 A. No, they haven't.

17 Q. Why not?

18 A. They don't concern the sections which I used as examples. And I think, as I said earlier,
19 I wasn't reliant on the translations or necessarily the transcripts to arrive at my conclusion.
20 As I discussed, it was very clear from the waveform itself in this recording that there
21 was a problem. So simply seeing a visual representation, it's clear that there's a
22 problem with the recording. So a minor error in the translation would not impact
23 my conclusion.

24 Q. We're going to turn to the next conversation. It's tab 4 of the binders. It's
25 CAR-OTP-0074-0610. Do you recall -- sorry.

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1 PRESIDING JUDGE SCHMITT: Mrs Taylor, do you see a need that we go into closed
2 session?

3 MS TAYLOR: Thank you, Mr President. I had one or two questions before playing it, so I
4 was going to try to do that in open session before going to private session.

5 Q. Dr Harrison, do you recall if you analyzed this recording to identify whether there may
6 be features indicative of alignment issues?

7 A. Yes, this looks familiar.

8 Q. And did you analyze it using Sony Sound Forge?

9 A. Yes, I did.

10 MS TAYLOR: We can now go into private session.

11 PRESIDING JUDGE SCHMITT: Yeah. Private session, please.

12 (Private session at 11.42 a.m.)

13 (Redacted)

14 (Redacted)

15 (Redacted)

16 (Redacted)

17 (Redacted)

18 (Redacted)

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1 (Redacted)

2 (Open session at 11.58 a.m.)

3 THE COURT OFFICER: We are in open session, Mr President.

4 MS TAYLOR:

5 Q. In this last section that you heard in which the right channel appears to continue talking,
6 does this appear to be a normal conversation pattern?

7 A. To me, no. It seems unnatural and is different to all the other recordings apart from
8 one.

9 Q. So we're just going to turn now to appendix C of your report. This is
10 CAR-D20-0006-1271. Could you briefly explain what appendix C describes?

11 A. Yes. This is a table which lists all 28 of the recordings which I examined. There is a
12 reference number in the very far left column, 128. There is then a column of dates on which
13 the calls occurred. There is also the Court's identification number for each recording. There
14 is then the file name of the actual audio file that I examined.

15 The next column shows the format of that recording, whether it was a WAV file or a
16 WMA file.

17 The next column is the duration of the recording in minutes and seconds.

18 The next column is the point in the recording which I've already mentioned, which is
19 the measurement of where the speech in the right channel ended.

20 The next column is the calculation of the difference between the duration of the
21 recordings and the point in the file where the speech finishes in the right channel. So
22 it's essentially the duration of the period at the end of the right channel where there is
23 no speech occurring.

24 And then the final column is that difference, that duration as a percentage of the
25 duration of the entire recording.

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1 And then just underneath the table there is a summary of the data provided above in
2 terms of minimum values for the duration, the end of right channel speech, the
3 difference, and the differences of percentage, the maximum of those values and also a
4 mean.

5 And within the table there are one, two, three, four, five recordings where I have N/A,
6 not applicable, within the end of right channel speech.

7 So there were 5 out of the 28 recordings where speech continued in the right channel
8 either to the very end of the recording, as was just demonstrated, that occurred in two
9 instances. The remaining three there was not an appreciable difference at the end of
10 the recording as there had been in the others or in the situation in the other two where
11 the speech ran on to the very end.

12 Q. Could you just explain your findings in the horizontal row at the bottom of the table, the
13 particular figures there?

14 A. In terms of the minimum and maximum and mean? Yes. The minimum duration, the
15 shortest recording was 1 minute and 1 second long, whilst the longest one was 21 minutes
16 and 52 seconds. And the average duration of the 28 calls was 7 minutes and 15 seconds.

17 In relation to the end of the right channel speech, the earliest which that occurred was
18 at 41 seconds, and the latest it occurred was at 16 minutes and 1 second. The
19 average was 5 minutes and 29 seconds.

20 The difference between the end of the recording and the end of the speech in the right
21 channel, the shortest of those measured was 8 seconds, the longest was 6 minutes and
22 4 seconds, and the average was 1 minute and 47 seconds. And representing those
23 differences as percentages, the smallest was 2 per cent, the largest 48 per cent and the
24 average was 25 per cent.

25 Q. So, Dr Harrison, if there's an average difference or misalignment of 25 per cent between

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1 the right and the left channel at the end of these recordings, and earlier you testified that the
2 degree of misalignment could vary throughout the recordings, what would be the impact of
3 this variable degree of misalignment on the objective accuracy of transcripts which are based
4 on recordings?

5 A. Overall as a general summary, the transcripts couldn't be considered to accurately
6 reflect the conversations as they occurred at the time. They should be treated with caution.

7 Q. Just before you addressed the recordings which have N/A or not applicable, and you
8 explained that's because there's no appreciable difference between the two channels, now,
9 you've put not applicable for CAR-OTP-0074-0452, which, as you mentioned, is the last
10 recording that we listened to in which it sounded like the speech from the right channel was
11 still ongoing at the same time that the left channel terminated the call.

12 So if the recorded time for these channels is the same, and it sounds as if the right
13 channel is still in the process of speaking when the left channel terminates the call,
14 what happened to the last part of the left channel's speech?

15 A. That bit of the conversation would not have been recorded.

16 Q. So would this suggest that there may be problems of synchronization even if the
17 recording times are the same for both channels?

18 A. Yes, that's correct, and that the synchronization issue has not just affected the right
19 channel, but the conclusion must be that the synchronization problem has occurred in the left
20 channel as well, but occurs less frequently and potentially to a lesser degree, but the
21 manifestation of the recording would show that that is what's occurred.

22 Q. I'm just waiting for the interpreters.

23 Earlier you testified that you could calculate the degree of misalignment by
24 calculating the difference in speech output between the two channels. If there's no
25 difference between the length of these two channels, is there a way to objectively

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1 measure the degree of misalignment for this recording and the other N/A recordings?

2 A. No, there isn't.

3 Q. I'd just like to turn briefly to page 10 of your report. And that's in binder tab 1,
4 CAR-D20-0006-1254. I see here that the table refers to a mean difference of 27 per cent. Can
5 you explain why there's a different figure in this table as compared to the table in appendix C?

6 A. Yes. This is a typographical error on my part, and I apologize to the Court for not
7 having noticed this. It was drawn to my attention, and I have looked back at my Excel
8 spreadsheet, and it was a copy-and-paste error in the formulas. So the table as reproduced on
9 page 10 or 1254 in the bundle is incorrect in terms of the mean values, the minimum or
10 maximum figures are correct, but the mean values should be ignored and the table in
11 appendix C should be taken as being correct.

12 Q. Would this typographical error have impacted on your overall findings in the report?

13 A. No, not at all.

14 Q. Earlier today you testified about the cause of these technical problems and the
15 explanation provided by Bumicom, that it was attributable to the equipment used and the use
16 of comfort noise. Now, if this is what generates the problem, is it possible that any
17 recordings between the same two numbers made with the same equipment and which
18 included comfort noise, could it have these types of technical problems?

19 A. It's possible that any other recordings made under the same circumstances could have
20 been affected by the alignment synchronization issue, given that they were made using the
21 same equipment, the same phone lines potentially that made these problematic recordings.

22 Q. Do you recall the position of Bumicom concerning the likely number of recordings
23 affected by this issue?

24 A. In their report, they referred to a small number, but didn't specify an actual number.

25 Q. Are you in a position to comment on the conclusion that a small number may have been

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1 affected?

2 A. It would not be in agreement with my findings, and that if the material I examined was
3 representative of all the other recordings as it would suggest that a larger number of
4 recordings had suffered from the problem, there was insufficient detail in the Bumicom report
5 to assess the methods that they had used to identify the recordings and that were suffering
6 with this problem; and other descriptions which they gave of the problem, such as it's only
7 occurring part way through a recording were also at odds with my findings. So I wouldn't
8 be happy with their description of it only affecting a small number of recordings.

9 Q. Dr Harrison, earlier today you testified that at your request the Prosecution position
10 concerning this issue was sent to you.

11 Do you recall what the Prosecution's position was on this issue?

12 A. I can't recall the precise wording that they used, but the general position was that
13 because the Registry had produced the recordings, that they were sufficiently reliable, and
14 also that the transcripts reflected the recordings, and that the problem again was only
15 concerning a small number of recordings, and that there was periodic overlap and
16 synchronization issues which didn't affect the intelligibility of the recordings I think, from
17 memory.

18 Q. Are you in a position to comment on their position regarding these recordings?

19 A. In relation to the first point on the fact of the recordings having been produced by the
20 Registry and, therefore, being reliable, both my examinations --

21 MS FROLICH: Objection, objection.

22 PRESIDING JUDGE SCHMITT: Yes.

23 MS FROLICH: I'm sorry, but at this point we are going into the realm of legal conclusions on
24 these recordings. We are not talking about technical reliability of the recordings. So in that
25 sense, I will object as this is a final conclusion that the Chamber should draw.

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1 PRESIDING JUDGE SCHMITT: No, no. I think the question was to the position that how
2 the witness recalls it, and that the Registry said that one position was because it comes from
3 the Registry, it is reliable. And we are talking about the reliability of these transcripts and of
4 the recordings and so forth. And it is overruled.

5 THE WITNESS: Yes. In relation to the issue with the recordings having come from the
6 Registry and, therefore, being reliable, both my findings and those of the Bumicom report
7 identified technical problems with the recording which, therefore, demonstrates that the
8 recordings were subject to technical difficulties and that the Registry isn't immune from
9 problems of a technical nature affecting their output and their products.

10 In relation to the position on the transcription and the recordings as a whole, I took
11 issue with the -- I think the word "slight" may have been used in the description of the
12 synchronization issues, and I drew attention to the average difference I believe at that
13 point in my report and felt that 2 minutes or -- sorry, that's the wrong mean value.
14 The 1 minute 47 was not a slight synchronization issue and, therefore -- as well, sorry,
15 the issue of intelligibility or understanding that can be gained from the transcripts,
16 simply because a transcript appears coherent and appears to make sense doesn't
17 mean that it actually reflected a conversation that occurred at the time. So it could,
18 as I said before, by chance the transcripts appear to make sense, even though they
19 have suffered from the misalignment problem.

20 MS TAYLOR: Thank you, Dr Harrison.

21 Thank you, Mr President, your Honours. I have no further questions.

22 PRESIDING JUDGE SCHMITT: Thank you very much, Mrs Taylor.

23 Other Defence teams with questions?

24 MR TAKU: No questions from the Arido Defence team, your Honour.

25 MR RODOMA: (Interpretation) Thank you, your Honour. Mr Babala's team would have

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1 some questions to put to Mr Harrison.

2 PRESIDING JUDGE SCHMITT: Other Defence -- (Microphone not activated)

3 MR DJUNGA: (Interpretation) No questions to put, your Honour, to this witness.

4 MR GOSNELL: No questions at this time, Mr President.

5 PRESIDING JUDGE SCHMITT: Then, Mr Rodoma, you have the floor.

6 MR RODOMA: (Interpretation) Thank you very much, your Honour.

7 QUESTIONED BY MR RODOMA:

8 Q. Good morning, Witness.

9 A. Good morning.

10 Q. Mr Harrison, this morning when counsel Melinda Taylor was asking you certain
11 questions, in the French transcript, page 16, lines 24 to 26, you said that the software used
12 didn't have an impact on your conclusion; is that correct?

13 A. Yes, that's correct that I could have used other software, and assuming it allowed me to
14 visualize the waveforms, that wouldn't have impacted my conclusion.

15 Q. Thank you. I've got a question of a practical nature. If I've understood that the
16 software that was used, it had no impact on the conclusions. My question is as follows:
17 What about the capacity and competence of the user of that software?

18 A. Yes, the user is an integral part, as they are the analyst. The software itself is merely a
19 tool to be used, so the analyst must understand what they see on the screen, what they click
20 on, and how to interpret what they see on the screen.

21 Q. Thank you. Do I understand from your answer that in sum, the conclusions can differ
22 depending on the analyst?

23 A. In a general sense, yes, analysts can reach different conclusions.

24 In this particular case in relation to certain features, I would be very surprised, would
25 say there was no speech in the right channel at the end of a recording when there, in

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1 my mind, clearly isn't, and hopefully that's been clear to the Court. There may be
2 slight differences in the positioning of a cursor or slight disagreement about how long
3 a pause might be before one would consider it to be unnatural. But in the very
4 broadest sense that the recordings have suffered from synchronization issues, in my
5 view, any other competent analyst or expert would arrive at the same conclusion
6 using the methods and approach that I've followed.

7 Q. Thank you. I now want to go to your report and namely point 6 thereof concerning the
8 general description of the recordings.

9 A. Yes.

10 Q. Thank you. Mr Harrison, you received 28 recordings of telephone conversations.

11 A. Yes.

12 Q. Thank you. Now, out of these 28, you mentioned that there were 29 which weren't
13 compressed, while 8 were in a format which had loss.

14 A. Yes.

15 Q. My question is as follows: So you say there isn't a loss of WMA. So the first question
16 is if you could explain to us what are WMA data?

17 A. Yes. WMA is an abbreviation for Windows Media Audio. It's a format, a way of
18 storing audio information, much like you may have a typed document that might be in
19 Microsoft Word format, it might be a PDF document, it might be a plain text file that the
20 content is essentially the same but the means of storing it is different.

21 The issue with lossy compression, as I have in my footnote, this is a means of storing
22 a recording in a way which takes up less space on your hard drive, it requires less
23 data.

24 I think people may be more familiar with the MP3 format used to store music
25 recordings, which can be downloaded. And the principle is that parts of the signal

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1 information can be discarded, which are imperceptible to the human ear. That's the
2 principle behind lossy compression. And my view in this case, in the examination I
3 undertook, was that this wasn't of consequence and would not affect my conclusions.
4 And the loss of data isn't in the sense of in time of material being missing, it's certain
5 frequencies which, because of the way the human ear works, can't be detected, can't
6 be heard, so the storage -- the file format discards that information.

7 Q. Thank you very much. You used the adequate term, so you're talking about stocking.
8 Now, I've only got a small amount of knowledge in this area, but you've got two different
9 types of compression, as I understand it. You have one which is lossless and one which is
10 lossy, which could be called a destructive compression. Could I call it that?

11 A. Yes, that would be correct or non-reversible as well as destructive, yes.

12 Q. So my question is as follows: The Judge asked you a question around midday with
13 regards to the problem which occurred with regards to the alignment of the recordings, and
14 you answered, unless I'm mistaken, that where it concerned these recordings, it was a
15 technical problem.

16 A. Yes. A technical problem caused by the recording equipment and the configuration of
17 the telephone system which that was connected to.

18 Q. Indeed. So irremedial -- so irremedial without the absence -- with the absence of
19 human intervention?

20 A. In the sense of not being able to remedy the issue within the recordings, I understand
21 that the problem was ultimately fixed in the detention centre so it wouldn't occur on future
22 recordings.

23 Q. Well, you say that the problem was resolved at the detention centre, but my question is
24 as follows: If the problem was resolved at the detention centre, that means that there's been
25 human intervention.

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1 A. Yes. There was human intervention in the configuration of the recording equipment at
2 the detention centre, so a setting was changed within the recording equipment, and that
3 prevented this problem from occurring on recordings that were made after that date when the
4 configuration change was made.

5 Q. The question that I wanted to put, Mr Harrison, at the time that you carry out audio
6 compression, unless I'm wrong, the aim of compression is to reduce the size of it for storage.

7 A. Yes, that's correct.

8 Q. So is it possible in a general way to envisage that during compression you make or you
9 knowingly make certain data disappear?

10 A. That is what the process does. Whether the user would be absolutely aware that that's
11 what they were doing, that they were discarding information, I can't comment. And it
12 would depend on the person doing the compression as to whether they knew, but in a
13 technical sense, when you're applying the compression to a recording, you are discarding
14 some data.

15 MR RODOMA: (Interpretation) Thank you. No further questions, your Honour. Thank
16 you.

17 PRESIDING JUDGE SCHMITT: Thank you very much. Before we give the floor the
18 Prosecution, I would like to ask Mrs Taylor if the Defence of Mr Bemba wants to submit the
19 report of Dr Harrison and its annexes?

20 MS TAYLOR: Yes. Thank you very much for reminding me, Mr President, your Honours.
21 The Defence for Mr Bemba would formally move to have the expert report and its annexes, as
22 identified on our exhibit list. I think we said which ones we would like to tender into
23 evidence. Those are the ones we would like to tender into evidence with the corresponding
24 confidentiality noted. Thank you.

25 PRESIDING JUDGE SCHMITT: Thank you very much. That was just for clarification.

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- 1 Then I give the floor to the Prosecution.
- 2 MS FROLICH: Mr President, I just need a moment to set up my things.
- 3 PRESIDING JUDGE SCHMITT: Yes, of course.
- 4 MS FROLICH: Thank you.
- 5 QUESTIONED BY MS FROLICH:
- 6 Q. Thank you, once again. And good morning or good afternoon, actually, Dr Harrison.
- 7 A. Thank you. Good afternoon.
- 8 Q. Nice to see you again.
- 9 A. You too.
- 10 Q. We met yesterday during the courtesy meeting for the first time.
- 11 A. Yes.
- 12 Q. And before that we had an interview on 19 February in the presence of Ms Taylor,
- 13 correct?
- 14 A. Yes, that's correct.
- 15 Q. And this interview was recorded?
- 16 A. Yes, it was.
- 17 Q. And you have received the recording of that interview?
- 18 A. I've received a transcript, not the recording.
- 19 Q. You have had the opportunity to get familiar with that transcript?
- 20 A. I have read it a number of times, yes.
- 21 Q. Now, you have told us that you have 18 years of forensic experience; that is correct?
- 22 A. Yes, that's correct.
- 23 Q. And in all those years of experience, you have never encountered this particular type of
- 24 synchronization problem?
- 25 A. No, that's correct. I haven't.

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1 Q. And accordingly, you have never before produced a report on this particular type of
2 synchronization problem?

3 A. No, that's correct.

4 Q. And you received recordings in mostly Lingala with some French that -- and the Lingala
5 is the language that you do not understand?

6 A. Yes, that's correct.

7 Q. And French, as we know, you have limited proficiency in?

8 A. Yes.

9 Q. And you requested four English translations from the Defence, correct?

10 A. That's correct.

11 Q. And that is because you are more confident when dealing with English than with -- then
12 as when dealing with French. That's right, isn't it?

13 A. In terms of understanding content, yes.

14 Q. All right. Well, I would just like to ask you a few more questions about your reception
15 of materials for your analysis.

16 A. Yes.

17 Q. Now, you told us that on 15 January, you requested 10 to 15 additional recordings; is
18 that right?

19 A. I didn't place a number. I just requested further recordings.

20 Q. In the interview with the Prosecution, you did tell us, and this was -- I will give the
21 reference later. You told us that you requested about 10 to 15 more recordings. I'm going
22 by that.

23 A. Yes, I did say that in the interview. I've subsequently reviewed emails, and I didn't see
24 the number there.

25 Q. But you also told us that you thought if you had another 10 or 20 or 15 recordings, then

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1 that would be helpful in your analysis?

2 A. Yes, to the extent it would further demonstrate the problem if it was present in all of
3 them. But as I said in the interview, there were time constraints to finishing the report. I
4 could, in an ideal world, have examined all 700 and odd or all thousands of the recordings,
5 but there needs to be a sensible limit drawn on whether I had 28, 40, 50 recordings. I can't
6 speculate what I may have found in those other recordings, there may have been other
7 features, but the work I did is represented in the report. I made it clear it's only a small
8 percentage of the overall recordings that were made.

9 Q. Right. It was a limited exercise, as you told us, and it was limited by time that you had
10 at your disposal and the money as well, wasn't it?

11 A. Yes.

12 Q. And this particular request was made six days I believe before the deadline for the
13 submission of the expert report; that's right, isn't it?

14 A. The request by me for extra recordings, yes, that's correct.

15 Q. And a reason why you also requested more recordings was because you wanted to
16 check specifically that you had not just been provided with the recordings that had a problem
17 in them; that's right, isn't it?

18 A. Yes. I asked for more recordings that also covered a broader span of durations and
19 time over which the recordings were relevant, yes.

20 THE INTERPRETER: Message from the interpreters. Could Prosecution counsel be
21 requested to slow down? Many thanks.

22 PRESIDING JUDGE SCHMITT: I think Prosecution counsel has heard this and will oblige.

23 MS FROLICH: Yes. I will definitely endeavour to do so. And I do apologize to everyone,
24 in particular the interpreters. I will try to slow down.

25 Q. What you told us before, Dr Harrison, was that your assumption was that having the

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1 additional number of recordings if they showed similar results would mean that it would be
2 more suggestive of a larger extent of the problem.

3 A. Yes, in as far as conclusions can be drawn from 28 recordings. And I've stated in my
4 report that conclusions following on from that would need to be on the assumption that the 28
5 recordings I was provided with were representative of the whole set of recordings, which
6 having not had access to the recordings, I can't make that assumption, and having not selected
7 the recordings, I can't make that assumption of how representative they are.

8 Q. Okay. And at the time that you requested additional recordings, you did not have a
9 precise idea of how many recordings there were in the case?

10 A. No, that's correct. My initial understanding was that the number of relevant or
11 recordings being relied upon was in the hundreds, but I didn't have a specific figure.

12 Q. In your interview with the Prosecution, you said you thought at the time that there were
13 around a hundred.

14 A. I've read that, and I believe that that's an error in the transcription. I may have said "a
15 hundred," and it may have been transcribed as that, or I may have said hundreds, but in my
16 mind, I was under the impression that the recordings ran to the hundreds, not one hundred.

17 Q. Okay. It wasn't until the 20th of January though that you found out the precise
18 number of the recordings, per your request?

19 A. Yes, that's correct, at my request I asked for the precise or a more accurate estimate of
20 the number of recordings.

21 Q. And it was then that you were given the number of 708 recordings?

22 A. Yes, that's correct.

23 Q. And had you no way of checking this number, correct?

24 A. No, I didn't.

25 Q. Or, rather, to make it a more clear question, a more precise question, you had no way of

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1 checking that this was the correct number of all the recordings in existence, correct?

2 A. No. Without inquiring through other avenues in the court, no.

3 Q. And at some point you also realized you needed more time to complete your report?

4 A. Yes, that's correct.

5 Q. And you sought an extension for this purpose; isn't that right?

6 A. Yes, I did.

7 Q. And especially since at the time you were also working on another case unrelated to this
8 one?

9 A. I had completed another case in which I also asked for an extension, which had then
10 pushed -- it had used up some of the time I had allocated to this case by the other case having
11 run over, so I was working to catch up my time, and I wasn't able to meet the deadline, so yes,
12 I asked for an extension.

13 Q. And would it be fair to say that had you had more time and more money, you would
14 have analyzed more recordings?

15 A. If I had been asked to do so, I would happily have analyzed more recordings, yes.

16 Q. And had you been given more time to do so as well, right?

17 A. Yes, more time, that's a limiting factor.

18 Q. And you were never asked to do any additional work?

19 A. No. And as I said, the request for further recordings came from me.

20 Q. Now, at page 16 of your report, this is reference ending in 1260, the Defence reference
21 number, you state -- stated that half of the recordings were selected due to their relevance to
22 the charges in the case while the others were selected because they represented a variety of
23 durations and were made over a range of dates.

24 Did you -- so you said to us that you asked for the recordings to be randomised. Did
25 you specifically ask for, say, every week or every 5th of the month or any other

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1 manner in which you would have specified what you meant?

2 A. No. There was no clear specification given.

3 MS FROLICH: Your Honours, to the extent that this wasn't clear, this was tab 1 of the
4 Prosecution binder. And, of course, I know you're already familiar with that report.

5 Q. And then the Defence sent you the recordings that they selected for you?

6 A. Yes, that's correct.

7 Q. Now, you mentioned in your report, and this is at the very last page of your report, this
8 is page 18 of your report, you said that key conclusions and findings in your report were
9 reviewed by Professor French. That is correct?

10 A. Yes, that is correct.

11 Q. And you also consulted with a Dr Rhodes, Dr Richard Rhodes, who is also one of your
12 colleagues?

13 A. Yes, that is correct.

14 Q. With Dr Rhodes you discussed the general issues concerning the analysis and the
15 general approach to that analysis?

16 A. Yes. It was an informal discussion with him.

17 Q. Neither Professor French nor Dr Rhodes have ever dealt with this type of problem
18 before?

19 A. No, I'm not aware that they have, and they didn't mention they had.

20 Q. And Professor French made edits to your report?

21 A. Yes. I provided him with two draft versions which he read through for content,
22 grammar, typographical errors, and he made various suggestions on wording. He didn't
23 alter my overall conclusions or findings. His wordings were either requesting clarification
24 on a description or suggesting something or rewriting a sentence so its meaning was clearer
25 or removing maybe a colloquial term that I had included.

1 Q. Did Professor French review your calculations that you've done in the -- that are
2 demonstrated primarily in appendix C to your report?

3 A. I don't think he reviewed them in the sense of looking at the actual spreadsheets, but he
4 would have seen them as content within the report.

5 Q. Okay. So he did not check your calculations, would that be fair?

6 A. Yes.

7 Q. Did anyone else check your calculations?

8 A. No.

9 Q. When was the error in your report pointed out to you?

10 A. A couple of days ago.

11 Q. By whom?

12 A. By Defence counsel, Ms Taylor.

13 Q. Okay. So at the time that you prepared your report, you did not know this was an
14 error in your report?

15 A. No. That's correct. It was an oversight on my part and not picked up by Professor
16 French either.

17 Q. And there could be other errors, couldn't there?

18 A. I'm not aware that there were any other numerical errors. There may be typographical
19 errors. In terms of my findings and conclusions, the words represent the thoughts I have on
20 this matter. So I don't agree that there are errors in that sense, but there may be
21 typographical errors, yes.

22 Q. Okay. But then again, you were not aware of the other error either until it was pointed
23 out to you. So it would be fair to say it's possible that there are other errors that have been
24 unchecked?

25 A. It's possible. I can't deny that possibilities, but I've reread the report a number of times

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1 and, in terms of the substance of the content and my findings, they're not in error. They
2 represent my thoughts and views.

3 Q. Okay. Do you have the draft of your report as it was reviewed by Professor French
4 with his edits?

5 A. Yes. They are in existence.

6 Q. Would you agree it might be helpful for the Chamber to have that draft at their
7 disposal?

8 A. If the Chamber wishes to have the draft, the Chamber may have the drafts.

9 Q. Of course. Okay. Let me just very quickly try to recap the methods of analysis as
10 you've used them. I'll try to keep this in maybe simple or layman terms. When you take a
11 recording, then you open it with the software that you were using for that analysis, Sony
12 Sound Forge, correct?

13 A. Yes, correct.

14 Q. And when you open it, the software basically displays the graph as what we've seen
15 before --

16 A. Yes.

17 Q. -- in the hearing.

18 So this is a way of reading that file. When you open it, you just see the graph, it's
19 generated right away?

20 A. Yes, that's correct.

21 Q. And then obviously you see the two channels displayed, as we have seen?

22 A. Yes, that's correct.

23 Q. And then one can see the time stamps there and one can see -- one can take the cursor
24 and align the cursor to a particular time stamp where one sees the end of the last sound wave,
25 correct?

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1 A. Yes, that's correct.

2 Q. And then you would or one would read that time stamp and jot it, jot it down. I
3 assume you would note it somewhere?

4 A. Yes, or I think I may have copied and pasted the values.

5 Q. Okay. And then what you did was you subtracted the two values to get the difference,
6 right?

7 A. Yes. The duration of the recording, I subtracted from that the timing that I placed the
8 cursor at for the end of the speech in the right channel.

9 Q. And then you turned that into percentage points?

10 A. Yes.

11 Q. Basic math?

12 A. Yes.

13 Q. Maybe not for everyone, but for most people.

14 Did you produce physical copies of these graphs as displayed? Did you produce
15 printouts?

16 A. No, I didn't.

17 Q. Okay. And did you -- did you produce screenshots of these graphs?

18 A. No, I didn't.

19 Q. And obviously they are not in the report.

20 A. There's one --

21 Q. There's one?

22 A. -- example, yes, which demonstrates what I was speaking about, my figure 1.

23 Q. Right, of course. There's that one. For the remaining 27, we don't -- we don't see these
24 graphs in the report?

25 A. No. That's correct.

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1 Q. And they are not in the annex either?

2 A. No, they're not.

3 Q. Okay. I'll come back to that a little bit more later.

4 And you said also you conducted limited spectrographic analysis. For what
5 number of recordings did you do that?

6 A. I don't have a record of how many, but it was only a small number.

7 Q. Can you approximate?

8 A. Probably between two and four.

9 Q. And have you produced physical copies of this analysis the same way?

10 A. No. No, I haven't.

11 Q. And obviously they are not in your report either?

12 A. No.

13 Q. Okay. To just go back to then what you did for your analysis, so you would then listen
14 to the recordings using high quality headphones. You just -- very high sensitive
15 sound -- sensitive to sound, correct?

16 A. Yes, good equality headphones.

17 Q. And then you will listen for certain anomalies as you said. And in your report we can
18 maybe be a bit more specific, because in your report you identify four types of anomalies, and
19 these were overlapping speech, unnatural overlapping speech as you call it?

20 A. Yes.

21 Q. And this means simply, as we have seen, two people speaking at the same time?

22 A. Yes.

23 Q. For a period of time that is maybe longer than one would expect?

24 A. Yes, correct.

25 Q. You also observed instances of unnaturally long pauses, which is when no sound is

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1 heard for an extended period of time?

2 A. Yes, that's correct.

3 Q. And what you dub missing speech, which is really no speech in the right channel at
4 some point?

5 A. Yes.

6 Q. At a time towards the end?

7 A. Or -- or in the other direction as well, so speech not present in the left channel where one
8 would expect.

9 Q. And also missing utterances, which is when you can hear the answer, but you can't hear
10 the question, right?

11 A. Yes.

12 Q. Okay. And you also had the ability to hear the channels separately so you could
13 hear -- listen to just one channel or just the other channel at any given point?

14 A. Yes. I had that available to me, and most of the time when I listened I had one channel
15 in one ear and one channel in the other.

16 Q. Okay. But can you mute one of the channels?

17 A. Yes.

18 Q. And then you have only one channel coming into your ear?

19 A. Yes.

20 Q. And you also then consulted transcripts and translations?

21 A. Yes.

22 Q. And obviously when you look at any given translation or a transcript, you can separate
23 what each speaker is saying, correct?

24 A. Yes, I was able to do that.

25 Q. Okay. So would this be a fair summary or very generic, maybe a bit general, but of the

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1 steps that you have done to analyze the recordings?

2 A. Yes, I think that's a reasonable summary.

3 Q. As for the software that you used, okay, you've told us that this is software that is
4 commonly used in acoustic testing; that's right, isn't it?

5 A. Yes, it can be used for that.

6 Q. But it is not the only software that can be used for this analysis as we've heard?

7 A. No. There were many other different manufacturers, different people, software that
8 will do the same job.

9 Q. One could not call it standard software used for this type of analysis?

10 A. No, it's not that specialised or it's not the standout industry leader.

11 Q. And the reason why you used this particular software is because this is what you have
12 available in your lab?

13 A. Yes. It's what we've used for many years. It has a lot of functionality which we need
14 and use on a daily basis, and it does the job that we need it to do.

15 Q. I would just very quickly go back to the graph that you show in your report. And if we
16 could show from tab 1 the report, so that is reference number CAR-D20-0006-1244 at 1252, so
17 that is page 8 of the report.

18 And I think there should be no objection to staying in public session for this. This is
19 too a bit technical.

20 Do you see the graph in front of you?

21 A. I have my report open on that page. I have nothing on my screen.

22 Q. Madam court officer will assist you.

23 A. Thank you. Yes, I have it now.

24 Q. Okay. So what we can see again is the graph which measures the presence of sound on
25 the recording that you -- this is the graph that you produced for the report. And it measures

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1 the presence of sound on each of the channels. And what it shows is that two people
2 stopped speaking at different points in time; is that right?

3 A. It doesn't show that two people stopped speaking at different points in time. It shows
4 that that's how the speech is manifest in this particular recording.

5 Q. Okay. It appears from this basically that speech ends at different points this time --

6 A. Within --

7 Q. -- based on the graph?

8 A. Within the recording itself, speech ends at different points in time, yes.

9 Q. And this does not mean that one of them was not listening on the line?

10 A. No. I found no suggestion that there were any significant problems during the actual
11 conversations themselves. And the Bumicom report also said that there were no issues at the
12 time of the telephone conversations themselves.

13 Q. Maybe we are talking at cross-purposes here. My question is simply that you cannot
14 see from this graph if after the end of speech that one person did not remain listening on the
15 line for a period of time?

16 A. From simply looking at that plot, no, I can't tell that.

17 Q. And on top of that, according to you, sound of very low level might not even get
18 captured on this display; that's right, isn't it?

19 A. It may not be possible to see it from this display, no. That's correct. There's a limit to
20 the resolution, how many pixels there are, so you could only represent so much in one
21 display.

22 Q. Well, just to be specific, in your report at page 7, 1251, that's the last four digits, you say
23 or you write in the second paragraph from the bottom, last two lines, "In sections of a
24 recording where there is no signal or it has a very low level, just a horizontal line is seen."
25 This is what you write in your report. Therefore, sound of very low level will not get

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1 captured on a display sometimes.

2 A. Not a display as it's shown there. It's possible to zoom in in the amplitude display and
3 also, as I think we saw on the screen, there are level metres at the side, so one can see when
4 there is signal or no signal.

5 But you're correct, from that particular display, that configuration, you can't
6 differentiate between low-level signal and no signal.

7 Q. But you did not provide that qualification in your report, did you?

8 A. No. That's correct.

9 PRESIDING JUDGE SCHMITT: Could we -- do you think we could make then the
10 shortened lunch-break. What I would suggest, we meet at 2 o'clock again.

11 MS FROLICH: Thank you, Mr President.

12 THE COURT USHER: All rise.

13 (Recess taken at 12.59 p.m.)

14 (Upon resuming in open session at 2.01 p.m.)

15 THE COURT USHER: All rise.

16 THE COURT OFFICER: Mr President, we are in open session.

17 PRESIDING JUDGE SCHMITT: Mrs Frolich has still the floor.

18 MR FROLICH: Thank you, Mr President.

19 Q. Welcome back, Dr Harrison.

20 A. Thank you.

21 Q. We left off by looking at your graph in your report, at page 8 of your report, and I
22 would like to now just talk a little bit about Appendix C to your report. We don't have to
23 show it; although we can, if you prefer, but we don't have to. This table, like we said,
24 contains the result of acoustic testing as we or as you explained to us before we broke; correct?

25 A. Yes, that's correct. It's measurements that I made.

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1 Q. And these are measurements you made on the basis of looking at these measurements
2 on the displays when you opened the recordings with the software that you used?

3 A. Yes, that's correct.

4 Q. And there is no way for us to check these measurements because we don't have these
5 graphs, correct?

6 A. No, you can't do it with the contents of my report, but the recordings are available, I
7 understand, to the Court, so they can be verified.

8 Q. But not on the basis of your report?

9 A. No, not on the content of my report.

10 Q. And today we heard a lot of analysis that you provided for the four recordings that
11 Ms Taylor played to you. And this analysis, these details are not in your report either.

12 A. No. The comments that I made are not within the body of my report. The findings
13 themselves, the summary of them, in the sense of the descriptions of the different types of
14 problems and how they were manifest, are within the report. But no, I don't specifically list
15 all of the points which I made, no.

16 Q. And when did you discuss these issues with Ms Taylor, the specific issues that were
17 raised today?

18 A. I haven't discussed the specific issues, other than what's within the report.

19 Q. Okay. And then if we go to the critical listening analysis, you spoke again about
20 synchronisation issues that you observed on the basis of inter alia critical listening. And this
21 problem, according to you, varies within the recordings, correct?

22 A. Yes. The degree of the misalignment isn't fixed within the recordings.

23 Q. And it varies across the recordings as well?

24 A. Yes, that's true.

25 Q. And you can't quantify this variable, correct?

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1 A. Not within the recordings. As I said, the only technical way in which it can be
2 quantified is by measuring the end of the speech in the right channel versus the end of the file.

3 Q. Okay. But my question is the pattern of variable. There is no pattern, as such, to the
4 degree of variable, the degree of misalignment?

5 A. No, that's correct, because the degree of misalignment is governed by the behaviour of
6 the recording equipment which is responding to the speech signal or lack of speech signal,
7 which varies within the conversations because one person will speak for different amounts of
8 time within the recordings. So I would very much expect it to be different, given the
9 mechanism which causes the problem in the first place.

10 Q. And then further, the problem is based on different combinations of the four factors that
11 you analysed; that's right, isn't it?

12 A. Those were the factors that I used to detect the problem. They are consequences of the
13 problem, yes.

14 Q. Okay. So the manifestation of these problems come in different combinations in
15 different recordings?

16 A. Yes, or I relied on different combinations within different recordings to reach my
17 conclusion that there was a technical problem with that recording.

18 Q. Well, in your report -- this is page 6 -- you simply say that there is --
19 If I may just refer to your report, this is what you say, "My finding that the individual
20 recordings were suffering from this problem is based on different combinations of the
21 following factors in each recording."

22 So my understanding of this is that each recording will have a different combination
23 of these following four factors present; would that be right?

24 A. Yes, that's correct.

25 Q. And with respect to 23 of the recordings, the results of these details of this kind of

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1 analysis are not present in the report at all, are they?

2 A. I haven't detailed them, no.

3 Q. And we can't tell from the report how specifically these problems could affect the
4 comprehensibility of the content of each of the recordings, we just cannot tell from reading
5 your report?

6 A. No. That's absolutely correct. And it isn't an exercise which I conducted in relation to
7 the recordings. I was concerned with whether there was a technical issue present, not
8 necessarily with how that affected each individual recording or any specific section. That
9 would have been a mammoth undertaking.

10 Q. For which you would have needed more time, right?

11 A. Indeed.

12 Q. Now, you also mentioned the transcript that you consulted. And what you told us
13 about recordings is that the sequence of speech content for each of the speakers appears
14 unaltered from the original. That would be correct, wouldn't it?

15 A. Each speaker in isolation, yes, so that the ordering of utterances from just one speaker,
16 there was no evidence that that was altered.

17 Q. And to that extent, the transcripts accurately reflect the sequence of speech for each of
18 the speakers; that's right, isn't it?

19 A. For an individual speaker, yes, that's correct.

20 Q. And you also told us that you found no evidence, as you explained to the Presiding
21 Judge, that any content is missing, correct?

22 A. That's correct. There was no evidence there was anything missing. It's difficult, as
23 I've said in the report, to make a strong conclusion because one would normally in a
24 conversation be comparing the turns which are, as we've discussed, out of sequence. But no,
25 there is no evidence that there was anything missing.

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1 Q. And therefore, the transcripts or -- and translations would then, in that sense, be
2 accurate and reliable evidence of what -- the content of the conversation and the sequence for
3 each of the speakers as well?

4 A. Yes, absolutely. As I said in my report, the issue of reliability of these recordings is
5 relative to the questions that one asks about them.

6 Q. Okay. Well, you also told us or you say again in your report, and this is at page 1255,
7 "Other than in situations where the speech of Mr Babala ceases before the end of the recording
8 or there are specific conversation topics or turn sequences which can be compared, there are
9 no reliable objective means to determine the degree of misalignment."
10 So that would mean that there are, in fact, some reliable objective means to determine
11 this degree, as you say?

12 A. In relation to the two I've mentioned, yes.

13 Q. I'm sorry. I'm not sure I understand that answer. Could you please elaborate just a
14 little bit? I don't understand.

15 A. Yes, that one objective means of determining the extent of the misalignment is the
16 measurements which I've made based on the end of speech in the right channel. Another
17 would be where there is a non-contentious point of topic which would give some reference.
18 Those are the only two I found in the recordings. There may be other situations as I alluded
19 to where you may have speech from one speaker which has appeared in the channel with the
20 other speaker, so there you would have an objective means of being able to reconstruct the
21 conversations. So that's a hypothetical objective means which I wasn't able to apply in this
22 instance.

23 Q. But again, this is your first time analysing this problem, correct?

24 A. Yes, that's correct.

25 Q. In fact, I think maybe the examples, if you refer to it, can be found on page 8 to 9 of the

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1 report where you, as a demonstration of the synchronisation issue, you mention at the very
2 bottom of page 8, "The further demonstration of the synchronisation issue concerns slides 86
3 and 89 in the transcript where Mr Babala mentions taking pity on him."

4 Then continuing in the surrounding speech he does not make mention
5 taking -- Mr Bemba does not mention taking pity. However, just to go a little bit
6 further on, in lines 120 and 123 of Mr Bemba's speech, he says, "Well, why having pity?
7 And so why would you have pity on him?"
8 Is that one of the examples that you referred to?

9 A. Yes. That was exactly what I was referring to.

10 Q. And someone with more knowledge than you about this case and the evidence might
11 have even more success in piecing these conversations together; that's possible, isn't it?

12 A. It's possible based on some context, but there may well be disagreements by different
13 parties as to whether that was the only possible interpretation within a specific section.

14 Q. Okay. But it is still possible that that could be the case?

15 A. Yes. I limited that as just one example. There were other sections I found with names
16 mentioned, but that was a reasonably concrete example.

17 Q. And if you understood the language better, you could possibly find even more instances
18 where you could piece the conversation together. That's possible, isn't it?

19 A. Yes, potentially. If I had been asked to do that as a specific task, I would have enlisted
20 the assistance of native speakers.

21 Q. And if you had other facts at your disposal or corroborating evidence to support some
22 of the issues raised in the recordings, you could potentially have more success as well?

23 A. Potentially, yes.

24 Q. And going back again to what you said about the sequence in relation to each of the
25 speakers that is captured accurately in recordings as well as in the transcripts and translations,

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1 once you identified these anchor points for a conversation, you could then ostensibly piece
2 together the remainder of the conversation, correct?

3 A. That would be a reasonable method to follow to attempt to do that, yes.

4 Q. Now, you made your conclusions on the basis of a sample size of 28 out of 708. That is
5 a little less than 4 per cent of the number that you were given, correct? Well, I don't know if
6 you can -- you probably cannot do the exact math right now, but that would be -- you can
7 maybe take my word for it.

8 A. On the comment on the maths, I think in my report I state as well just less than 4 per
9 cent, so I have no disagreement with the maths.

10 In terms of the conclusions, my conclusions are based or my findings are on those 28
11 recordings. I've said that I found problems in all of them.

12 The extension of those findings or the applicability of those two, the larger set of
13 recordings, I think I've said quite clearly in my report that any conclusions can only
14 be drawn according to how representative those 28 recordings are of the whole, and
15 that is something which I personally cannot provide any insight to. I would be
16 extremely surprised if these were the only recordings out of all the 700 which had
17 suffered from this problem given the fact that all of the 28 that I've looked at suffer
18 from the problem. But in terms of assessing the actual number, I can't give you a
19 number.

20 Q. Thank you, Dr Harrison. I have no further questions for you.

21 A. Thank you.

22 PRESIDING JUDGE SCHMITT: Thank you very much.

23 The Defence has as always the possibility to re-examine if they want to.

24 MS TAYLOR: Thank you, Mr President, your Honours. I have only a few questions, so we
25 should be finished relatively quickly.

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1 PRESIDING JUDGE SCHMITT: So you have the floor, Mrs Taylor.

2 QUESTIONED BY MS TAYLOR:

3 Q. Dr Harrison, the Prosecution posed some questions regarding cross-examination
4 regarding the fact that you hadn't encountered this synchronisation problem before. Do you
5 recall from the Bumicom technical report whether the recording system that was used for
6 these recordings is a generic recording system or more of a bespoke one?

7 A. I think the actual equipment itself, I wouldn't term it generic, but it's a specific make and
8 model of recording equipment, but there is reference within that report that the ICC and the
9 UN had very particular and specific requirement resulting in a non-standard configuration of
10 phone lines and equipment.

11 Q. So if there is a non-standard configuration, would this be more likely to generate
12 non-standard problems that you might not have encountered before?

13 MR FROLICH: Objection, Mr President. This calls for speculation on the basis of nothing.

14 PRESIDING JUDGE SCHMITT: Again, we have an expert here. I think he can answer the
15 question based on his experience and on his expertise that he in general has. It's overruled.

16 THE WITNESS: I think not just from a personal perspective, but from the people installing
17 the equipment, if it was a common problem, they would have ensured that their set-up didn't
18 allow it to happen. It would hopefully have been something they would have tested. So if
19 something is used in an unknown way, perhaps today's example served with the equipment,
20 that we suffered technical problems trying to do something new and different that hadn't
21 been done before, then yes, problems can arise.

22 And also as well to the point of not having encountered this, the type of telephony
23 involved VoIP, Voice over Internet Protocol, is a newer type of technology as well so
24 wouldn't have been as common in previous years either, so less of an opportunity to
25 have encountered such a technical problem.

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1 Q. Dr Harrison, the Prosecution put questions to you regarding the selection of materials
2 that were sent to you. Do you recall asking the Defence to send you a flawless conversation
3 from the relevant period to use for comparison purposes?

4 A. Yes, I did. I requested that there were recordings sent where this problem hadn't
5 occurred.

6 Q. And did the Defence send you what they thought was a flawless conversation?

7 A. Yes, they did. One of the samples they had identified as flawless, and on my
8 examination I was happy, satisfied that there was a synchronisation issue with that. I
9 relayed that information to them.

10 I also requested recordings from after the, I think 13th of February 2014, when the
11 problem was resolved, so that I would have a reference recording or non-problematic
12 ones. But I was informed that the monitoring or the collection of relevant recordings
13 to this matter had ceased before the problem had been remedied.

14 Q. Dr Harrison, during cross-examination the Prosecution referred to limits in time and
15 money, and unfortunately this is something the Defence does suffer. Earlier today you
16 testified that you considered that the 28 recordings were sufficiently representative to fulfil
17 the instructions. In cross-examination you testified that if there was more time and money
18 and you were asked to look at more recordings, you would have done so.

19 So I'd just like to clarify, did you consider it necessary to have had more time and to
20 have analysed more recordings in order to respond to the instructions in an accurate
21 and meaningful manner?

22 A. No, not in order to respond to the instructions. I was satisfied given the instructions
23 that were given to me that the materials I had were sufficient for me to reach and sustain the
24 conclusions that I have.

25 Q. Dr Harrison, just before the break, the Prosecution showed you the graph or the

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1 screenshot which is in your report which has the flat line. And it was put to you whether it
2 was possible to identify whether the flat line could in fact be someone listening or someone's
3 voice that was inaudible. And you were asked if you could exclude this possibility from just
4 looking at the flat line itself.

5 Now, if the right channel was just simply listening, is that an element you would have
6 been able to identify when you were adopting your critical listening analysis?

7 A. Yes, that was what occurred, how I conducted the analysis. I didn't just look at the
8 waveform displays. I listened to the material as well. So there were sections within that
9 speech where I spoke of missing dialogue. So there would be the person agreeing saying
10 "mm," "mm" in response to somebody else or asking a question, there being a pause and then
11 a "yes" or "no." So it was clear from the left channel that the speech represented there was
12 part of an interaction with another party. It wasn't someone simply speaking I think as I said
13 a monologue or a recitation. It was one-half of an interaction.

14 Q. Now, if we were to entertain this possibility that the straight line rather than mean
15 misalignment it could be silence or it could be simply as I think it was put to you the right
16 channel being inaudible and not sufficiently loud enough to trigger the waveform, what
17 would be the impact of having three possible variables on the objective accuracy of the
18 transcripts which you viewed in terms of whether they are a representation, an accurate
19 representation as to what was stated or the conversation in temporal time?

20 A. Sorry. I'm not entirely clear of the question.

21 Q. Certainly. It was far too long. So if it's possible, it was put to you that the flat line --

22 PRESIDING JUDGE SCHMITT: Mrs Frolich.

23 MR FROLICH: I will object before Ms Taylor repeats the question. It's outside of the scope
24 of the witness's expertise to know how something was transcribed, and it's also speculative,
25 Mr President.

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1 PRESIDING JUDGE SCHMITT: But you brought the matter up with the transcript and
2 when it is worded that it has a relation to what you brought up on your cross-examination.
3 It is overruled.

4 And Mrs Taylor is mindful of this factor. And since the witness has not understood
5 the question, you'll rephrase it in a way he understands first and second that it
6 matches what I have said.

7 MS TAYLOR: Thank you, Mr President.

8 Q. And I apologise, Dr Harrison. Earlier today we discussed the impact on the objective
9 accuracy of the transcripts if you have variable misalignment.

10 A. Yes.

11 Q. Now, the Prosecution has put to you that it can't be excluded whether this flat line, it
12 could be misalignment, it could be silence or it could be someone who we simply can't hear
13 what they're speaking?

14 A. Yes.

15 Q. Now, we have one transcript which is reflective of these three variable possibilities. So
16 what is the impact of the fact that the Prosecution has put that there are now three
17 possibilities on the objective accuracy of this transcript?

18 A. I think I was discounting the possibility of it being somebody just listening because, as I
19 said in my previous answer, there is clearly an interaction occurring which the speaker in the
20 left channel is involved in, and also the speech at the end of the right channel corresponds to
21 the end of a call, and the utterances would appear to align at the end, albeit 200 -- 2 minutes, 2
22 and a half minutes out of alignment.

23 So I'm not sure that that is a scenario that can be considered in assessing the accuracy
24 of the transcripts themselves. I accepted the point in relation to simply visually
25 examining the waveform plot that it can't be discounted simply on a visual analysis,

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1 but my analysis was more than that. So I did discount that as a possibility.

2 Q. And if we were to simplify it and to say that there were these two possibilities, it's
3 inaudible and you don't have a waveform because of that or its misalignment, would that
4 lessen or increase the objective accuracy of the transcripts?

5 MR FROLICH: Your Honour, object. This is highly leading again. I would like Ms Taylor
6 to be a bit more careful.

7 PRESIDING JUDGE SCHMITT: It's overruled.

8 Please answer the question.

9 THE WITNESS: If the end was simply silent or there was no -- there was speech there that
10 was somehow missing in the sense of not being present at all, it wouldn't increase the
11 accuracy of the transcripts in a sense because there is still the synchronisation problems earlier
12 on within the recordings.

13 The focus on the end is simply a very clear manifestation of the problem. There are
14 recordings where there isn't such a problem at the end as noted by the NA in my table.
15 But the problems of synchronisation in terms of the overlap, the unnatural pausing,
16 they are still there. So discounting the end material doesn't change the problem or
17 the interpretation.

18 And I think another point to make is that the transcripts reasonably accurately reflect
19 the recordings as they appear. So the transcripts include the notes of overlapping
20 speech and silence. So in one respect they are a relatively accurate representation of
21 the recordings, but not necessarily of the conversations as they occurred at the time.

22 Q. And if the voice was inaudible, would that mean that it's missing from the transcripts?

23 A. It would be missing from the recordings and from the transcripts.

24 Q. And when you were listening to the recordings, did you encounter any instances in
25 which in a recording you couldn't hear one of the speakers because of it was too low?

1 A. No, I didn't encounter that. There are some recordings which are noisier and poorer
2 quality than others. But using my equipment I can increase the level of the recording so it's
3 audible.

4 Q. Earlier in cross-examination, you were asked if there is a reliable and objective means to
5 determine misalignment, and you referred to end of speech and non-contentious topics. But
6 earlier today you also talked about the issue of plausible alignment and the problem that a
7 component of speech might appear to be plausibly aligned but not actually aligned because of
8 these technical problems.

9 So how easy would it be for someone such as myself who is listening to these
10 recordings without adopting critical listening skills to differentiate between plausible
11 misalignment and actual concrete alignment?

12 A. I think that would be very difficult to do, and I'm not sure even myself or a native
13 linguist could do that, that there would be chance alignments which would appear to be
14 plausible, comprehensible. There would be nothing to suggest that that wasn't an interaction
15 which had occurred, a question that was asked and an answer given could very simply be in
16 the original conversation "Is it raining today?" and the answer was "Yes," but the chance
17 alignment is "Is it raining today?" and the chance alignment ends it with a "No," and then
18 that's it. The conversation moves on.

19 I don't think other than some independent record, another recording of the
20 conversation, that there could envisage that there would be no way to tell the
21 difference.

22 Q. Dr Harrison, you were asked that if you could identify a concrete anchor point, could
23 you realign the conversation on the basis of that anchor point. But earlier today you also
24 testified that the degree of alignment could vary throughout a recording and there could be
25 different issues. So if the misalignment can vary throughout the recordings, even if one can

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- 1 identify one concrete anchor point, can you objectively accurately reconstruct the transcript?
- 2 A. That wouldn't be possible. It would be a starting point as I said, but you can't simply
- 3 stretch out all the material in between. Because of the way the problem was created, it's the
- 4 degree of misalignment is changing according to how the silence is dealt with, and that would
- 5 change on a moment-by-moment basis. So you may reach a satisfactory alignment for a
- 6 number of turns one or two interactions, but then you may very soon reach a point where
- 7 there's ambiguity or multiple ways that an alignment could occur when someone is speaking.
- 8 There were several instances of "mm," "mm" in the background. Someone may be nodding
- 9 along and saying, "Yes," "Yes," "No."
- 10 It's not necessarily clear whether those yeses and nos would be ones that were said in
- 11 overlap with a long section of speech, whether they would be interspersed in the
- 12 utterances so it would just simply be question, answer, question, answer. So it
- 13 would be very difficult to reliably or without the possibility of lots of permutations to
- 14 reconstruct the conversation.
- 15 Q. Thank you, Dr Harrison. I have no further questions.
- 16 Thank you, Mr President, your Honours.
- 17 PRESIDING JUDGE SCHMITT: Thank you very much. Dr Harrison, this concludes your
- 18 testimony. Thank you for answering the questions. The Chamber wishes you a safe return
- 19 home.
- 20 (The witness is excused)
- 21 PRESIDING JUDGE SCHMITT: This also concludes the hearing for today. We'll resume
- 22 tomorrow at 9.30, not at 9 o'clock, with another expert to put it this way.
- 23 THE WITNESS: Thank you.
- 24 THE COURT USHER: All rise.
- 25 (The hearing ends in open session at 2.37 p.m.)