

UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL BOARD

RIVERBED TECHNOLOGY, INC.; DELL INC.;	)	
HEWLETT-PACKARD ENTERPRISE CO.; HP	)	CASE IPR2016-00972
ENTERPRISE SERVICES, LLC; TERADATA	)	PATENT 7,415,530
OPERATIONS, INC.; ECHOSTAR	)	
CORPORATION; AND HUGHES NETWORK	)	CASE IPR2016-01002
SYSTEMS, LLC,	)	PATENT 9,116,908
PETITIONERS	)	
	)	
VS	)	
	)	
REALTIME DATA LLC,	)	
PATENT OWNER	)	

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ORAL DEPOSITION OF  
CHARLES D. CREUSERE, PH.D.

January 19, 2017

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Reported by:

Ronald R. Cope

Job no: 17930

TransPerfect Legal Solutions

1 ORAL DEPOSITION OF CHARLES D. CREUSERE,  
 2 PH.D., produced as a witness at the instance of the  
 3 Patent Owner, and duly sworn, was taken in the  
 4 above-styled and -numbered cause on January 19, 2017,  
 5 from 9:03 a.m. to 2:30 p.m., before Ronald R. Cope, a  
 6 CSR in and for the State of Texas, Registered  
 7 Professional Reporter and Certified Realtime Reporter,  
 8 reported by machine shorthand at the Renaissance Hotel,  
 9 900 E. Lookout Drive, Richardson, Texas 75082, pursuant  
 10 to Patent Owner Realtime Data LLC's Notice of Deposition  
 11 of Charles D. Creusere, Ph.D., and the provisions stated  
 12 on the record.  
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 14  
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 16  
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 22  
 23  
 24  
 25

1 A P P E A R A N C E S (Continued)  
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1 I N D E X  
 2 Appearances 3  
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 5 Changes and Signature 163  
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 9 EXHIBITS REFERRED TO  
 FROM PREVIOUS DEPOSITION(S)  
 10 NUMBER PAGE  
 11 Exhibit Declaration of Charles D. 7  
 Creusere, Ph.D. (exhibit number  
 not given)  
 12  
 13 Exhibit 1001 United States Patent 7,415,530 34  
 14  
 15 Exhibit 1002 Declaration of Charles D. 10  
 Creusere, Ph.D.  
 16 Exhibit 1005 United States Patent 5,247,646 108  
 17 Exhibit 1011 Claim 24 147  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25



1 CHARLES D. CREUSERE, PH.D.,  
 2 having been first duly sworn, testified as follows:  
 3 EXAMINATION  
 4 BY MR. NOROOZI:  
 5 Q. Good morning, sir.  
 6 A. Good morning.  
 7 Q. You're here to testify today as to both the  
 8 '530 and '908 patents, correct?  
 9 A. Yes.  
 10 Q. And specifically with respect to opinions that  
 11 you've set forth in your declarations in IPR proceedings  
 12 as to those patents, right?  
 13 A. That is correct, yes.  
 14 Q. Now, both of the Claim 1s of the '530 and '908  
 15 patents require a data accelerator, true?  
 16 A. That is correct, yes.  
 17 Q. And the data accelerator in both of the  
 18 Claim 1s of the '530 and '908 patents has to compress at  
 19 least two data blocks, right?  
 20 A. I believe so. Let me just take a quick look at  
 21 that.  
 22 Q. And for the record, you're taking a look --  
 23 A. Yes.  
 24 Q. -- at one of your declarations?  
 25 A. Yes. The declaration for the '530 patent.

1 MR. NOROOZI: And so we'll mark that as an  
 2 exhibit with the same exhibit number as it has in the  
 3 proceeding.  
 4 A. And your question -- could you repeat the  
 5 question again with respect to Claim 1?  
 6 Q. (BY MR. NOROOZI) With respect to Claim 1 of  
 7 both of the '530 and '908 patents, the data accelerator  
 8 has to compress at least two data blocks, right?  
 9 A. Yes. It says specifically, "Said data stream  
 10 includes a first data block and a second data block."  
 11 Q. Okay. Now, the two data blocks in both  
 12 Claim 1s of both patents must be compressed using two  
 13 different compression techniques, right?  
 14 A. That is my understanding of the -- of both the  
 15 '530 patent and the '908 patent.  
 16 Q. And when we talk about "compression  
 17 techniques," that's the same thing as compression  
 18 algorithms, right?  
 19 A. Yes. Compression techniques, in my  
 20 understanding, is the same -- is synonymous with  
 21 compression algorithms.  
 22 Q. The data accelerator in both Claim 1s of the  
 23 '530 and '908 patents must also compress and store the  
 24 two data blocks faster than those same two data blocks  
 25 would be stored in received or uncompressed form, right?

1 MR. SOMMER: Object to form.  
 2 A. Okay. I'm going to -- just to compare, I'm  
 3 going to look at my deposition (sic) from the '908  
 4 patent as well because the language is a little bit  
 5 different in those two, in the claims in the two  
 6 patents.  
 7 Q. (BY MR. NOROOZI) And I just want to clarify  
 8 for purposes of the deposition: Do you understand that  
 9 you're not supposed to take any cues or draw any hints  
 10 as to how you should answer my questions based on  
 11 whether or not your counsel objects?  
 12 A. Yes. Yes. No. Yes, I understand that.  
 13 Q. Okay. So --  
 14 A. Okay.  
 15 Q. -- why don't we read back my question, and then  
 16 we can take the answer from there.  
 17 Well, I just I want to make sure it's  
 18 going to go on the record again, so let me just put it  
 19 on the record again. Withdrawn.  
 20 The data accelerator in both Claim 1s of  
 21 the '530 and '908 patents must also compress and store  
 22 the two data blocks faster than those same two data  
 23 blocks would be stored and received in uncompressed  
 24 form, right?  
 25 MR. SOMMER: Object to form.

1 A. That -- that is my interpretation. The claims  
 2 language in the two Claim 1s are a little bit different.  
 3 In the Claim 1 for the '530 patent, it specifically  
 4 says -- let's see -- a data stream is received by the  
 5 said data accelerator in received form. The said data  
 6 stream includes a first and second block. And then it  
 7 says the said data stream is compressed by the data  
 8 accelerator to provide a compressed stream by  
 9 compressing the first data block with a first  
 10 compression technique and second data block, second  
 11 compression technique, so --  
 12 Let's see. And then -- then we go down to  
 13 claim -- what we label Claim -- or what I label Claim I,  
 14 I should say: "Said compression storage occurs faster  
 15 than said data stream is able to be stored."  
 16 So by -- in my understanding, then said  
 17 data stream includes a first and second block, and the  
 18 said data stream thus is stored faster than could be  
 19 stored in the received form; therefore, the first data  
 20 block are stored faster.  
 21 The other claim is more explicit. In  
 22 Claim 1 in the other patent, that's more explicit;  
 23 whereas, it specif- -- it says -- it does not use the  
 24 word "data stream." It says specifically -- it says,  
 25 "Wherein the first" -- what I'm labeling Claim F in my

1 deposition (sic) for the '908 patent, it says, "Wherein  
2 the first and second data stream blocks are stored on  
3 the memory device, and the compression and storage  
4 occurs faster than the first and said (sic) data blocks  
5 are able to be stored on the memory device in  
6 uncompressed form."

7 So I would -- I would -- I would agree  
8 with that, though the language is a little bit  
9 different. I would agree with your statement.

10 Q. (By MR. NOROOZI) Now, in answering my  
11 question, you were also looking at your declaration with  
12 respect to the '908 patent, right?

13 A. That is correct.

14 MR. NOROOZI: And so we'll mark that as an  
15 exhibit with the same exhibit number that it has in that  
16 proceeding.

17 Q. (BY MR. NOROOZI) So I want to ask you a few  
18 more questions about the "faster than" limitation of the  
19 Claim 1s and how they work within the claim.  
20 And -- withdrawn.

21 For purposes of both of the Claim 1s of  
22 the '530 and '908 patents, the "faster than" limitation  
23 requires the compression of both data blocks using two  
24 different techniques, plus the storage of those same two  
25 compressed data blocks occur faster than those two data

1 That's very clear. And I would -- so I would also agree  
2 that because the limitation that -- let's see -- said  
3 compression and storage occur faster than said data  
4 stream is able to be stored on memory device in received  
5 form, that implies, along with the earlier statement in  
6 Claim 1, those two together imply that two different  
7 compression algorithms are used on two different blocks  
8 or can be used, I should say, on two different blocks  
9 and that the -- that the sum total of this process must  
10 allow for compression fast -- compression and storage  
11 that is faster than storage of uncompressed data alone.

12 Q. (BY MR. NOROOZI) I just want to clarify if  
13 there was an aspect of what I articulated that you  
14 disagree with so that we make any of those issues clear  
15 on the record. So let me break it down, if I could,  
16 step by step. Withdrawn.

17 Do you agree that the "faster than"  
18 limitation of Claim 1 of the '530 and Claim 1 of the  
19 '908 sets up a comparison with respect to two data  
20 blocks that compares the time it would take to store  
21 those two data blocks in uncompressed form versus the  
22 time it would take to store those two data blocks after  
23 compression and storage, right?

24 MR. SOMMER: Object to form.

25 A. I believe that -- that this limitation in the

1 blocks could be stored without any compression  
2 techniques or algorithms being applied to them, right?

3 MR. SOMMER: Object to form.

4 A. Could you restate your question? It was rather  
5 long.

6 Q. (BY MR. NOROOZI) Sure. And the reason it's  
7 long is I'm trying to make sure that we're kind of  
8 capturing all the limitations that go with the "faster  
9 than" limitation in one place. Are you with me on that?

10 A. I am, yes. Yes.

11 Q. Okay. So for purposes of both Claim 1s of the  
12 '530 and '908 patents, the "faster than" limitation  
13 requires the compression of both data blocks using two  
14 different techniques, plus the storage of those same two  
15 compressed data blocks occur faster than those two data  
16 blocks would be stored without any compression  
17 techniques or algorithms being applied to them, right?

18 MR. SOMMER: Object to form.

19 A. Well, I'm not sure that that's -- that's  
20 completely true in exactly how the claims statement -- I  
21 would -- I would agree that Claim 1, each of these  
22 Claim 1s taken a whole -- taken as a whole apply --  
23 requires that two different data compression blocks are  
24 applied to Block Number 1 and Block Number 2.

25 I would agree with the claim as a whole.

1 claim says that -- that it must be possible to compress  
2 these two data blocks and to store them in less time  
3 than it would take to store those same two data blocks  
4 in an uncompressed form.

5 Q. (BY MR. NOROOZI) Okay. And when you say "it  
6 must be possible," you understand there's a difference  
7 between method claims and system claims, right?

8 A. Yes.

9 Q. And with respect to the method claims, the  
10 limitation must actually be met, right?

11 A. Right. Sorry. I --

12 MR. SOMMER: Object to form.

13 Give me time to object.

14 THE WITNESS: Okay. Sorry.

15 A. Yes. It's -- this is -- this is a claims  
16 limitation that must be met. So what I should have said  
17 is I should have said to meet the requirements of the  
18 claim that the two blocks -- the compression and storage  
19 of those two blocks must result in a faster overall  
20 storage time than storing those two blocks uncompressed.  
21 So that is a limitation that must be met for the  
22 limitation of this claim to be fulfilled.

23 And I -- I apologize if I -- if I  
24 misstated.

25 Q. (BY MR. NOROOZI) No apology is needed. Thank

1 you, though, for clarifying that.  
 2 Now -- withdrawn.  
 3 For purposes of the "faster than"  
 4 limitation of both of the Claim 1s of the '530 and  
 5 '980 -- '908 patents, the resulting faster than storage  
 6 must occur on the same storage device, right?  
 7 MR. SOMMER: Object to form.  
 8 Q. (BY MR. NOROOZI) Why don't I rephrase that and  
 9 see if I can make it even clearer. Withdrawn.  
 10 When we're talking about the "faster than"  
 11 limitation of the Claim 1s of the '530 and '908 patents,  
 12 and specifically talking about the storage aspect of the  
 13 two data blocks in those Claim 1s, those two data blocks  
 14 need to be stored on the same storage device, right? On  
 15 one storage device?  
 16 MR. SOMMER: Object to form.  
 17 A. The claim language is "memory device," but that  
 18 certainly could -- could be equated to a storage device.  
 19 Q. (BY MR. NOROOZI) And with respect to the rest  
 20 of my question, do you agree that for purposes of the  
 21 "faster than" limitation, the two data blocks in  
 22 question need to be stored on a single storage device or  
 23 memory device?  
 24 A. I agree that the claim says that a memory  
 25 device is -- it says specifically "data accelerator is

1 coupled" -- "is coupled to memory device," and it says  
 2 in what we've -- what I've labeled Claim -- part C of  
 3 Claim 1 of the '530 patent, and then it says that  
 4 compressed stream is stored on said memory device. So,  
 5 yes, I would agree that that -- that since the  
 6 compressed stream is composed of two blocks, I would  
 7 agree that those two blocks are stored on the same  
 8 memory device.  
 9 Q. And as I think you just said, the storage  
 10 device on which the two data blocks are stored has to be  
 11 the same one that would otherwise store the two  
 12 uncompressed data blocks, right?  
 13 MR. SOMMER: Object to form.  
 14 A. According to Part I, said compression and  
 15 storage occurs faster than said data stream is able to  
 16 be stored on memory device in received form, so  
 17 certainly with respect to Claim 1 of the '530 patent,  
 18 that is -- that is correct.  
 19 If I look at the other patent, on the  
 20 memory device, the other patent -- what I've labeled  
 21 Limitation G in Claim 1 of the other patent also says  
 22 essentially the same thing. So to answer your question,  
 23 yes.  
 24 Q. (BY MR. NOROOZI) The Claim 1s of the two  
 25 patents, the '530 patent and '908 patent, set up a

1 comparison with respect to storing two uncompressed data  
 2 blocks and two compressed data blocks, right?  
 3 MR. SOMMER: Object to form.  
 4 A. A comparison. Well, I mean, they certainly --  
 5 the limitation clearly states that -- that -- clearly  
 6 states two cases, and it gives a condition under which  
 7 one case, storage -- compression and storage must be  
 8 faster than the other case. So -- so I -- I think that  
 9 that would -- by most people's definition, that would be  
 10 a comparison, so, yes, I would agree with you.  
 11 Q. (BY MR. NOROOZI) Now, for purposes of that  
 12 comparison, the storage device or the memory device is a  
 13 constant factor as between what happens with the two  
 14 uncompressed data blocks and what happens with the two  
 15 compressed data blocks, right?  
 16 MR. SOMMER: Object to form.  
 17 A. There is only one memory device referenced here  
 18 and it is referenced consistently, so I would agree that  
 19 that should be viewed as a constant factor.  
 20 Q. (BY MR. NOROOZI) And so that means that the  
 21 storage speed capabilities of the system at issue in the  
 22 Claim 1s of the two patents is also a constant for  
 23 purposes of the Claim 1s of the patents, right?  
 24 MR. SOMMER: Object to form.  
 25 A. Yes. So that -- so that the claim -- this

1 limitation of Claim 1 -- I would agree with you that the  
 2 limitation of Claim 1 then is relative to the specific  
 3 memory device being evaluated. So you're -- you're  
 4 contemplating a specific memory device, and then you are  
 5 making that comparison.  
 6 Q. (BY MR. NOROOZI) And similarly, the transfer  
 7 speed capability from the data accelerator to the  
 8 storage device is also constant for purposes of the two  
 9 Claim 1s of the '530 and '908 patents, right?  
 10 MR. SOMMER: Object to form.  
 11 A. I would ask you to clarify that. What transfer  
 12 speed are you referring to?  
 13 Q. (BY MR. NOROOZI) I'm talking about the  
 14 actual -- so -- withdrawn.  
 15 When we talk about the storage speed  
 16 capabilities, we're talking about some kind of a data  
 17 write per amount of time rate, correct?  
 18 A. For instance, a bandwidth, number of bits per  
 19 second, is that what you're referring to?  
 20 Q. Yes.  
 21 A. Okay.  
 22 Q. And so there's also -- withdrawn.  
 23 And there's some limitation that all disk  
 24 drives have as to how quickly they can write, for  
 25 example, right?

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