

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DELL INC., EMC CORPORATION, HEWLETT-PACKARD
ENTERPRISE CO., and HP ENTERPRISE SERVICES, LLC,

Petitioners,

v.

REALTIME DATA LLC,

Patent Owner.

Case: IPR2017-00179

Patent No. 9,054,728

Case: IPR2017-00176

Patent No. 7,161,506

CROSS-EXAMINATION OF:
DR. CHARLES D. CREUSERE
Friday, August 4, 2017

Reported by:
SUSAN L. CIMINELLI
Job no: 19344

1 DR. CHARLES D. CREUSERE, called for
 2 cross-examination by counsel for Patent Owner,
 3 pursuant to notice, at the offices of Winston &
 4 Strawn, LLP, 1700 K Street, N.W., Washington, D.C.,
 5 before SUSAN L. CIMINELLI, CRR, RPR, a Notary Public
 6 in and for the District of Columbia, beginning at
 7 9:38 a.m., when were present on behalf of the
 8 respective parties:
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1 C O N T E N T S
 2 DR. CHARLES D. CREUSERE
 3 EXAMINATION BY: PAGE
 4 Counsel for Patent Owner 5
 5 Counsel for Petitioners 146
 6
 7 I N D E X T O E X H I B I T S
 8 *There were no exhibits marked at this deposition.
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1 A P P E A R A N C E S
 2 On behalf of Patent Owner:
 3 KAYVAN B. NOROOZI, ESQUIRE
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 11 On behalf of Petitioners:
 12 ANDREW R. SOMMER, ESQUIRE
 13 Winston & Strawn, LLP
 14 1700 K Street, N.W.
 15 Washington, D.C. 20006-3817
 16 202.282-5000
 17 asommer@winston.com
 18
 19 ALSO PRESENT:
 20 Tom Brown, Esquire, In-house Counsel EMC
 21 (Via telephone)
 22 * * * * *

1 P R O C E E D I N G S
 2 Whereupon,
 3 DR. CHARLES D. CREUSERE,
 4 was called as a witness by counsel for Patent Owner,
 5 and having been duly sworn, was examined and
 6 testified as follows:
 7 C R O S S - E X A M I N A T I O N
 8 MR. SOMMER: On behalf of Petitioner, you
 9 have Andrew Sommer from Winston & Strawn. With me on
 10 the phone today is Tom Brown from Dell EMC.
 11 MR. NOROOZI: And for Patent Owner, Kayvan
 12 Noroozi.
 13 BY MR. NOROOZI:
 14 Q. Dr. Creusere, good morning. I see you
 15 have some documents in front of you, is that right?
 16 A. Correct.
 17 Q. And could you just go through and tell me
 18 what you have there?
 19 A. Sure. I have the Franaszek patent,
 20 Exhibit 1004. Sebastian patent, I can't read the
 21 exhibit number on this one. The Aakre patent. The
 22 Hsu paper from Software Practice and Experience. The

1 Fallon patent '506. The Fallon patent '728. A copy
2 of my declaration for the '506 patent. And a copy of
3 my declaration for the '728 patent.

4 Q. Okay, thank you. How did you prepare for
5 today?

6 A. I reviewed all of the materials that I had
7 used in preparing my declaration. I reviewed my
8 declaration. I reviewed the decision to institute by
9 the Patent Board. I reviewed the Patent Owner
10 response. And I had discussions with Drew and
11 Michael Woods about this material.

12 Q. Did you speak to anybody else?

13 A. No.

14 Q. Did you consider or review any other
15 materials besides the one that you just mentioned?

16 A. I did review my transcripts from the --
17 one of the depositions I did back in January. And I
18 do not -- I do not recall reviewing other
19 documentation. But I could have missed something.

20 Q. Other than what you just told me, do you
21 recall reviewing any prior art documents,
22 dictionaries or other documents that you had not

1 previously cited in your declaration?

2 A. I believe that in studying the Sebastian
3 prior art, I did take a very brief look at
4 patent -- patents cited by Sebastian. Well, it's
5 given on column 4, line -- it's cited on column 4,
6 line 18 in the Sebastian patent and it's cited as an
7 application by Mr. Schindler, 08/970,220. I did take
8 a very brief look at that.

9 Q. What caused you to want to look at that
10 reference?

11 A. Based on discussion, I was curious exactly
12 what that reference entailed.

13 Q. And why?

14 A. Because Sebastian refers to it when
15 discussing possible compression that might, possible
16 specific compression algorithms that might be
17 applied, and so I felt I had not previously looked at
18 it. I felt that it might be worth looking at.

19 Q. Okay. So what were the column and line
20 numbers again?

21 A. It is column 4, line 18.

22 Q. And on your original declaration, you did

1 not consider or discuss the Schindler reference cited
2 in the Sebastian reference, true?

3 A. No, that's true.

4 Q. And did your evaluation of the Schindler
5 reference in any way modify or influence your
6 opinions compared to the opinions set forth in your
7 declaration?

8 A. No, it has no impact on my opinions.

9 Q. About how long did you prepare for this
10 deposition?

11 A. I believe -- well, we spent yesterday in
12 discussions for most of the day. And I put in
13 probably about six or seven additional hours prior to
14 the discussion.

15 Q. Let me ask you about Franaszek. In
16 Franaszek, regardless of whether the system
17 recognizes the data type, has data type information,
18 representative samples of each block are tested to
19 select an optimal encoder for the block, right?

20 A. So Franaszek first does a comparison to
21 see if type information is available. If it is, it
22 uses that type information to select a list of

1 possible encoders that is optimized for that type.
2 If not, it will select from the default encoder list.
3 And in both cases, once it's finished with that
4 process, it will test all of the decoder, all of the
5 encoders on that list. It will test a -- all the
6 encoders on that list on a sample of the block of
7 data and it will choose one of those encoders based
8 on that test.

9 Q. And as a part of the testing that happens
10 in Franaszek, regardless of whether there is a data
11 type provided to Franaszek's system or not, the
12 testing will always identify the compressibility of
13 the data block using the different encoders that are
14 tested on the sample, right?

15 A. I wouldn't phrase it exactly that way. I
16 would say that Franaszek will determine the encoder
17 that achieves the highest, that -- let me rephrase
18 that. Franaszek will attempt to determine the
19 encoder that achieves, that will achieve the highest
20 compression on that block. It will not necessarily
21 succeed, but it will attempt to do that.

22 Q. The purpose of Franaszek's -- withdrawn.

1 One purpose of Franaszek's testing on a
2 data block sample is to determine the compressibility
3 of the data block using the different possible
4 encoders that are in the list, right?

5 A. Again, I don't believe I would phrase it
6 that way. I would phrase it as Franaszek is trying
7 to determine which encoder will hopefully compress
8 the data block best.

9 Q. In order to do that, doesn't Franaszek
10 identify for each encoder in the list that is being
11 considered, how well that encoder is expected to
12 compress the data block?

13 A. I would again prefer to phrase it in the
14 way that I phrased it, which is that -- that the real
15 goal is to determine which decoder, which encoder
16 will compress the data block or to try to determine,
17 try to estimate which encoder will compress the data
18 block the best. I believe that is the goal.

19 Q. How does Franaszek's testing and sampling
20 approach make that determination?

21 A. Franaszek's testing and sampling approach
22 makes that determination by testing a portion of the

1 block with each of the compression algorithms in that
2 list, and assuming that at least one of those
3 algorithms achieves sufficiently high compression,
4 high enough compression to clear a threshold. Then
5 the best -- then the -- one of those encoders from
6 that list which achieves the best compression on that
7 sample will be selected and used to encode the entire
8 block.

9 Q. And when you say best, you mean highest
10 compression ratio, right?

11 A. In the preferred embodiment of Franaszek,
12 it will choose the encoder that achieves the highest
13 compression ratio.

14 Q. And is there any other embodiment in
15 Franaszek that provides an alternative to what you
16 just described?

17 A. There is no other embodiment that I have
18 seen that I can recall that is explicitly spelled out
19 in Franaszek that would do something different than
20 that.

21 Q. So in Franaszek, the ultimate compression
22 technique that's applied to a data block will always

1 be selected based on how well that compression
2 technique is expected to compress the data block in
3 terms of compression ratio. True?

4 A. Again, in the preferred embodiment of
5 Franaszek, as spelled out in the description of the
6 invention, Franaszek will always choose solely based
7 on which of the encoders in its list achieves highest
8 compression ratio, again, assuming that encoder
9 achieves above the 30 percent threshold.

10 Q. When Franaszek doesn't have a data type,
11 it will use a default list of compression techniques,
12 true?

13 A. Yes. Franaszek will use a default list if
14 it does not have a data type.

15 Q. But Franaszek will not ever select a
16 particular compression technique to apply to a data
17 block simply because the data, a block does not come
18 with a data type, true?

19 MR. SOMMER: Object to form.

20 THE WITNESS: So you're asking -- could
21 you rephrase that question, please?

22 BY MR. NOROOZI:

1 Q. Happily.

2 A. Okay.

3 Q. In all instances, when a data block that's
4 provided to Franaszek's system does not come with
5 data type information, Franaszek will select the
6 ultimate compression technique if one is selected at
7 all from a list of possible default compression
8 techniques. True?

9 A. Yes. Franaszek will do its testing
10 procedure on the sample. And based on testing
11 procedure, it will -- and assuming that it clears the
12 threshold requirement, it will select one of those
13 encoders from that list.

14 Q. And so when a data block comes into
15 Franaszek's system with that data type information,
16 it is not possible to predict without any other facts
17 which specific compression technique will be used to
18 compress that data block, assuming some compression
19 technique will be selected. True?

20 MR. SOMMER: Object to form.

21 THE WITNESS: I wouldn't necessarily say
22 that it is not possible to predict, because there are

1 means that people develop for trying to predict
2 compressibility of different blocks without doing a
3 full compression. But within the framework of the
4 Franaszek patent and his preferred embodiment, his
5 embodiment does not -- does not detail, to my
6 recollection, a means for doing that, for predicting
7 the compressibility prior to doing the sampling.

8 BY MR. NOROOZI:

9 Q. Now, when Franaszek has data type
10 information, it will generate a preselected list of
11 compression techniques to choose from for that data
12 block, right?

13 MR. SOMMER: Object to form.

14 THE WITNESS: I would rephrase that and I
15 would say that if Franaszek has type information, it
16 will use, it will use the appropriate list of
17 compression algorithms for that type. It will not
18 necessarily generate it, and there is nothing in
19 Franaszek that says it generates the list on the fly.

20 BY MR. NOROOZI:

21 Q. Okay. So your point is simply that
22 Franaszek will have in some fashion a list of

1 algorithms that have been predetermined to be the
2 appropriate set for a particular data block given the
3 data type information that has been provided for that
4 data block?

5 A. Yes. Franaszek will have a list of
6 algorithms associated with a given type of data,
7 assuming that, assuming that it knows that type of
8 data. Franaszek doesn't address the situation
9 directly, where, where it doesn't know -- where there
10 might be type description data. It doesn't know it.

11 But assuming it knows that data, it will have some
12 sort of a list associated with that data of possible
13 compression algorithms and it will select, it will go
14 through the same process of selecting one of those
15 compression algorithms to apply to encode the block.

16 Q. And to your point just a second ago,
17 Franaszek does not contemplate a situation in which
18 it is provided with data type information but does
19 not have a list of compression techniques associated
20 with that data type. True?

21 A. From the preferred embodiment of
22 Franaszek, I don't recall any indication that

1 Franaszek contemplates that scenario.

2 Q. When Franaszek has a data type information
3 and has generated a preselected list of encoders for
4 that data type or has identified that list, let's say
5 -- let me withdraw and start over because I know you
6 don't like the phrasing "generate." Withdrawn.

7 When Franaszek has a data type and has
8 identified a preselected list of encoders for that
9 data type, it will sample and test all those
10 algorithms against the data block like we said
11 earlier. True?

12 A. Yes, it will do the -- it will take a
13 sample that will compress that sample each of the
14 encoder types. It will do the threshold test and it
15 will select the encoder type that chooses the highest
16 compression that exceeds the threshold.

17 Q. So in the '728 patent specification, it's
18 taught that a data block will be compressed with
19 multiple different encoders and the ultimate
20 compressed block that's output will be the one that
21 has the highest compression ratio. True?

22 A. In the '728 patent, I certainly would

1 agree that there is at least one embodiment within
2 the '728 patent that operates in such a manner where
3 it, where it, where it attempts to choose, select an
4 encoder that achieves the highest compression rate.
5 I'm not certain that that is the only -- I'm not
6 certain that the '728 patent doesn't have additional
7 embodiments or options that might not do things a
8 little bit differently.

9 Q. The '728 patent does not teach a testing
10 and sampling approach, whereby a sample of the data
11 block is tested in order to ultimately select the
12 compression technique that's used for the data block.
13 True?

14 A. Well, I believe it depends on how you
15 define sample. I mean, the '728 patent certainly
16 discusses compressing the entire data block. And one
17 could contend that the entire data block is just a
18 sample of 100 percent.

19 Q. You don't have an opinion like that in
20 your declaration, right?

21 A. No.

22 Q. And --

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