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

DR. CHARLES D. CREUSERE, called for cross-examination by counsel for Patent Owner, pursuant to notice, at the offices of Winston & Strawn, LLP, 1700 K Street, N.W., Washington, D.C., before SUSAN L. CIMINELLI, CRR, RPR, a Notary Public in and for the District of Columbia, beginning at 9:38 a.m., when were present on behalf of the respective parties:

APPEARANCES

On behalf of Patent Owner:

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On behalf of Petitioners:

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ALSO PRESENT:

Tom Brown, Esquire, In-house Counsel EMC
(Via telephone)

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CONTENTS

INDEX TO EXHIBITS

*There were no exhibits marked at this deposition.

PROCEEDINGS

Whereupon,

DR. CHARLES D. CREUSERE,

was called as a witness by counsel for Patent Owner, and having been duly sworn, was examined and testified as follows:

CROSS-EXAMINATION

MR. SOMMER: On behalf of Petitioner, you have Andrew Sommer from Winston & Strawn. With me on the phone today is Tom Brown from Dell EMC.

MR. NOROOZI: And for Patent Owner, Kayvan Noroozi.

BY MR. NOROOZI:

Q. Dr. Creusere, good morning. I see you have some documents in front of you, is that right?

A. Correct.

Q. And could you just go through and tell me what you have there?

A. Sure. I have the Franaszek patent, Exhibit 1004. Sebastian patent, I can't read the exhibit number on this one. The Aakre patent. The Hsu paper from Software Practice and Experience. The

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

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

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

Q. Did you speak to anybody else?

A. No.

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

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

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

previously cited in your declaration?

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

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

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

Q. And why?

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

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

A. It is column 4, line 18.

Q. And on your original declaration, you did

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

A. No, that's true.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. SOMMER: Object to form.

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

BY MR. NOROOZI:

Q. Happily.

A. Okay.

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

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

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

MR. SOMMER: Object to form.

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

means that people develop for trying to predict compressibility of different blocks without doing a full compression. But within the framework of the Franaszek patent and his preferred embodiment, his embodiment does not -- does not detail, to my recollection, a means for doing that, for predicting the compressibility prior to doing the sampling.
BY MR. NOROOZI:
Q. Now, when Franaszek has data type information, it will generate a preselected list of compression techniques to choose from for that data block, right?
MR. SOMMER: Object to form.
THE WITNESS: I would rephrase that and I would say that if Franaszek has type information, it will use, it will use the appropriate list of compression algorithms for that type. It will not necessarily generate it, and there is nothing in Franaszek that says it generates the list on the fly.
BY MR. NOROOZI:
Q. Okay. So your point is simply that Franaszek will have in some fashion a list of

algorithms that have been predetermined to be the appropriate set for a particular data block given the data type information that has been provided for that data block?
A. Yes. Franaszek will have a list of algorithms associated with a given type of data, assuming that, assuming that it knows that type of data. Franaszek doesn't address the situation directly, where, where it doesn't know -- where there might be type description data. It doesn't know it. But assuming it knows that data, it will have some sort of a list associated with that data of possible compression algorithms and it will select, it will go through the same process of selecting one of those compression algorithms to apply to encode the block.
Q. And to your point just a second ago, Franaszek does not contemplate a situation in which it is provided with data type information but does not have a list of compression techniques associated with that data type. True?
A. From the preferred embodiment of Franaszek, I don't recall any indication that

Franaszek contemplates that scenario.
Q. When Franaszek has a data type information and has generated a preselected list of encoders for that data type or has identified that list, let's say -- let me withdraw and start over because I know you don't like the phrasing "generate." Withdrawn.
When Franaszek has a data type and has identified a preselected list of encoders for that data type, it will sample and test all those algorithms against the data block like we said earlier. True?
A. Yes, it will do the -- it will take a sample that will compress that sample each of the encoder types. It will do the threshold test and it will select the encoder type that chooses the highest compression that exceeds the threshold.
Q. So in the '728 patent specification, it's taught that a data block will be compressed with multiple different encoders and the ultimate compressed block that's output will be the one that has the highest compression ratio. True?
A. In the '728 patent, I certainly would

agree that there is at least one embodiment within the '728 patent that operates in such a manner where it, where it, where it attempts to choose, select an encoder that achieves the highest compression rate. I'm not certain that that is the only -- I'm not certain that the '728 patent doesn't have additional embodiments or options that might not do things a little bit differently.
Q. The '728 patent does not teach a testing and sampling approach, whereby a sample of the data block is tested in order to ultimately select the compression technique that's used for the data block. True?
A. Well, I believe it depends on how you define sample. I mean, the '728 patent certainly discusses compressing the entire data block. And one could contend that the entire data block is just a sample of 100 percent.
Q. You don't have an opinion like that in your declaration, right?
A. No.
Q. And --

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