

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HP INC., DELL TECHNOLOGIES INC., DELL INC.,
LENOVO (UNITED STATES) INC.,
Petitioners,

v.

UNIVERSAL CONNECTIVITY TECHNOLOGIES, INC.,
Patent Owner.

IPR2024-01429
U.S. Patent No. 7,187,307

**PETITIONERS' AUTHORIZED REPLY TO PATENT OWNER'S
PRELIMINARY RESPONSE**

PETITIONERS' EXHIBIT LIST

Ex. 1001	U.S. Patent No. 7,187,307 (“’307 Patent”)
Ex. 1002	Prosecution History of U.S. Patent No. 7,187,307 (U.S. Patent App. No. 10/459,989)
Ex. 1003	Declaration of Dr. Andrew Wolfe
Ex. 1004	U.S. Patent Pub. No. 2002/0159450 to Shin <i>et al.</i> (“Shin”)
Ex. 1005	“Hardware Design and Implementation of IP-over-1394 Protocol Stack and Its Evaluation,” Mohd Yusairi, Bin Abu Hassan, and Koki Abe, ITE Technical Report Vol.27, No.18, PP 51-85 (March 2003) (“Yusairi”).
Ex. 1006	Declaration of Nathaniel E. Frank-White
Ex. 1007	Declaration of Yukio Iwahana
Ex. 1008	“IEEE Standard for a High Performance Serial Bus,” in IEEE Std 1394-1995, pp.1-384 (1996) (“IEEE1394”)
Ex. 1009	“Serial ATA: High Speed Serialized AT Attachment,” Revision 1.0a, January 7, 2003. (“SATA 1.0a”)
Ex. 1010	“High-Definition Multimedia Interface Specification Version 1.0,” December 9, 2002 (“HDMI 1.0”)
Ex. 1011	“Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications,” IEEE Standard 802.3, 1998 Edition (“IEEE 802.3”)
Ex. 1012	Declaration of Dr. Knut Grimsrud
Ex. 1013	Declaration of Steve Venuti
Ex. 1014	U.S. Pat. No. 6,324,602 to Chen <i>et al.</i> (“Chen”)
Ex. 1015	CV of Andrew Wolfe, Ph.D.

Ex. 1016	English translation, certification, and Japanese original of Apostille from National Diet Library (Tokyo, Japan) regarding Yusairi
Ex. 1017	English translation, certification, and Japanese original of Yusairi from National Diet Library (Tokyo, Japan)
Ex. 1018	“Line Coding,” from EEWeb, https://www.eeweb.com/line-coding/#:~:text=Line%20coding%20is%20the%20process%20of
Ex. 1019	“Line code,” from Wikipedia, https://en.wikipedia.org/wiki/Line_code
Ex. 1020	“8b/10b encoding,” from Wikipedia, https://en.wikipedia.org/wiki/8b/10b_encoding
Ex. 1021	“Duplex (telecommunications),” from Wikipedia, https://en.wikipedia.org/wiki/Duplex_(telecommunications)
Ex. 1022	“Plesiochronous system,” from Wikipedia, https://en.wikipedia.org/wiki/Plesiochronous_system
Ex. 1023	“Encapsulation (networking),” from Wikipedia, https://en.wikipedia.org/wiki/Encapsulation_(networking)
Ex. 1024	“Non-return-to-zero,” from Wikipedia, https://en.wikipedia.org/wiki/Non-return-to-zero#:~:text=In%20telecommunications%2C%20a%20non%2Dreturn,other%20neutral%20or%20rest%20condition.
Ex. 1025	Petitioner HP, Inc.’s <i>Sotera</i> Stipulation
Ex. 1026	Petitioner Dell Technologies, Inc. and Dell, Inc.’s <i>Sotera</i> Stipulation
Ex. 1027	Petitioner Lenovo (United States) Inc.’s <i>Sotera</i> Stipulation
Ex. 1028	Petitioner Lenovo Group Limited’s <i>Sotera</i> Stipulation

I. PATENT OWNER RELIES ON AN INCORRECT IMPLICIT CONSTRUCTION AND ALSO IGNORES A THEORY FOR SHIN

Patent Owner contends that Petitioner’s art does not teach: “(1) encoding both application data and control bits **together** to generate encoded data or (2) decoding encoded data to recover both application data and control bits as required by the independent challenged claims.” POPR, at 1-2. In doing so, Patent Owner relies on an implicit claim construction that improperly reads in an unclaimed requirement that the application data and control data must **both be encoded together** to generate the “encoded data.” See *id.* at 27 (“the recited ‘encoded data’ of the claims must include both application data and control bits”), 33 (same).

Claim 1 merely recites “wherein the first endpoint is configured to generate encoded data in accordance with a line code” and claim 53 similarly recites “receiving encoded data . . . , the encoded data having been generated in accordance with a line code.” Claims 1 and 53 do not specify **what data** must be encoded to generate the claimed “encoded data,” much less whether any data must be encoded **together** to generate “encoded data.” Further, while these claims also recite “decod[ing] the encoded data to recover application and control bits,” they do not specify that **both** application data and control bits must have been **encoded**, much less whether both must have been encoded **together**, to allow for their recited recovery. While the ’307 specification describes embodiments where they certainly

can both be encoded and can also be encoded together, there are no words of lexicography or manifest exclusion requiring that. That other claims (e.g., dependent claim 9 and independent claim 23) explicitly require that application data and control bits must be input words that are encoded together, such as in a cell, demonstrates that this is not required by claims 1 and 53.

Patent Owner relies on its improper implicit construction to attempt to distinguish Shin. Pet., 28-34. Petitioners' annotated version of Shin's Figure 9C shows application data (orange) being encoded by a "data encoder" and "m" control bits (green) being encoded as primitives, with both being transmitted to the receiver where the application data (orange) is recovered by a "data decoder" and the control bits are recovered by the "primitive parser." POPR, at 29 (annotated); Pet., 19-20; Ex.1003, ¶80. Patent Owner faults Shin for not depicting its control bits being encoded **together** with its application data by the same encoder or decoded by the same decoder. POPR, 30-31 (arguing the primitives do not travel through the "Data encoder" or "Data decoder"). But this argument relies on an incorrect construction, because the control bits need not be **encoded together** with the application data. Patent Owner also sets forth no additional argument or evidence that the generating and parsing of the primitives is not encoding and decoding of the "m" control bits.

In addition, Patent Owner entirely ignores Petitioner's additional theory that both the application data (orange) and "m" control bits (green) are encoded together

in line code that is transmitted and then decoded to recover the application data and control bits from the line code, which would satisfy even Patent Owner's incorrect construction. Pet., 20; Ex.1003, ¶¶87-88; *see also id.*, ¶¶80-86.

II. PATENT OWNER RELIES ON AN INCORRECT IMPLICIT CONSTRUCTION AND ALSO IGNORES A THEORY FOR YUSAIRI

Patent Owner argues that Yusairi's IP data (application data) and link header, which includes a transaction code and a type field (each comprising control bits), that are all encapsulated together do not constitute "encoded data" because "[e]ncapsulation does not change the underlying bits in anyway" and instead "merely repackages the data." POPR, at 39-40. Patent Owner contends "encoding" requires "chang[ing] the underlying bits." POPR, at 40. However, Patent Owner defeats its own argument when it concedes that "adding additional bits" would be one way of "encoding," because merely adding additional bits would not change the underlying bits themselves. *Id.* In any event, Yusairi's encapsulation adds bits, such as by adding a header to the application data during encapsulation. Pet., 46-47.

Next, Patent Owner ignores Petitioner's argument that the claimed "encoding" is also satisfied by Yusairi's use of IEEE1394, which uses an NRZ line code to encode the application data and control bits together for transmission and then decode them at the physical layer. Pet., 43-44, 46. Patent Owner does not dispute that this would constitute "encoding" even under its construction. Finally,

Patent Owner argues that Yusairi's transaction code and type field could not be changed without the packet being ignored. POPR, 41-42. This argument relies on the same incorrect construction and is also tellingly unsupported by its declarant.

III. PATENT OWNER RELIES ON THE SAME INCORRECT ARGUMENTS FOR SHIN IN COMBINATION WITH YUSAIRI

Finally, for claims 23 and 68, the Petition argues it would have been obvious to use Shin's block code to encode Yusairi's packets that include both application data and control bits. Pet., 54-55. Patent Owner argues Yusairi in view of Shin does not disclose encoding input words indicative of application data and control bits based on Patent Owner's same argument for Shin above. POPR, at 43-50. Patent Owner is wrong for the same reasons set forth above.

IV. THE BOARD SHOULD NOT DENY UNDER *FINTIV*

Petitioners' *Sotera* stipulations (Exs. 1025-1028) remove any concerns underlying *Fintiv*. While the June 2022 Guidance was rescinded, Petitioners' *Sotera* stipulations nonetheless resolve the *Fintiv* analysis strongly against denial. Patent Owner also ignores the Dell and HP cases when *Fintiv* is "holistic" as to all facts.

Factor 1 is neutral or disfavors denial, because no stay has been requested yet in the LGL Case in E.D. Tex., the Dell Case has been stayed in its entirety pending the IPRs (Ex.2003, at 9), and the HP court indicated it "generally" would stay if institution is granted. Case No. 4:24-cv-04097-YGR (N.D. Cal.), Dkt. 112 at 4:9-13.

Factor 2 is neutral or disfavors denial. The *Sotera* stipulations remove concerns with any district court trial schedules. Also, the Dell Case has been stayed, and the HP trial date is about 5 months after the anticipated final written decision here. 4:24-cv-04097-YGR (N.D. Cal.), Dkt. 93. The LGL trial date in E.D. Tex. is speculative given the growing backlog of cases in that district.

Factor 3 is neutral or disfavors denial. The *Sotera* stipulations remove any concern of District Court investment. Also, no Markman hearing will occur in the LGL Case or HP Case before the institution decision. Ex.2001, at 4; No. 4:24-cv-04097-YGR (N.D. Cal.), Dkt. 77 at 10. Party discovery has not begun in the HP Case, *id.* at 6, and the Dell Court noted little investment had been made. Ex.2003 at 4-5.

Factor 4 strongly disfavors denial because Petitioners' *Sotera* stipulations mitigate concerns regarding duplication of efforts of conflicting decisions, and Factor 4 thus "weighs strongly in favor of not exercising discretion to deny institution under 35 U.S.C. § 314(a)." *Sotera*, Paper 12, at 19.

Factor 5 is, at worst, neutral. *Fintiv* did not suggest Factor 5 favors denial when the petitioner is the defendant. *Fintiv*, 13-14. Further, Patent Owner relies only on the LGL Case for Factors 1-4, of which neither Dell nor HP is a party. Thus, that Dell and HP are parties to co-pending cases has no bearing on Factor 5.

Factor 6 strongly disfavors denial because Patent Owner's only arguments on the merits rely on incorrect implicit constructions and ignoring Petitioner's theories.

Dated: March 10, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e), service of the foregoing and Exhibits 1025-1028 was made on Patent Owner via e-mail as detailed below:

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