

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TIKTOK, INC.,

Petitioner,

v.

CELLSPIN SOFT, INC.,

Patent Owner

IPR2024-00757

U.S. Patent No. 8,756,336 B2

IPR2024-00759

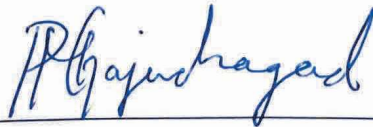
U.S. Patent No. 8,862,757 B2

IPR2024-00760

U.S. Patent No. 8,898,260 B2

Before GREGG I. ANDERSON, CYNTHIA M. HARDMAN,
and MICHAEL A. VALEK, *Administrative Patent Judges.*

SECOND DECLARATION OF PAVAN M. GAJENDRAGAD



PAVAN M. GAJENDRAGAD
EXECUTED MAY 1, 2025

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I. EXPERT QUALIFICATIONS AND SCOPE

1. My name is Pavan M. Gajendragad. I have been retained by counsel for the Patent Owner in this matter, Cellspin Soft, Inc. (“Patent Owner” or “Cellspin”), to provide expert testimony, including this Second Written Report, on the subject of patent validity under 35 U.S.C. §§ 102-103, and 112. More specifically, I have been asked to provide my opinions in rebuttal to certain arguments offered by Petitioners and their expert, Dr. Patrick Traynor, in these related matters. My compensation for my work in this matter is not dependent upon the outcome of any aspect of this matter. I am being compensated at my normal hourly rate of \$250 per hour.

2. My understanding of the Asserted Patents, Challenged Claims, Date of Invention, Legal Framework, and Claim Construction, are all as set forth in my earlier Declaration dated January 3, 2025 (hereafter as “Gajendragad [Exhibit 2001]”). In addition, I hereby adopt the various sections of my earlier Declaration, including my earlier opinions and discussions of the relevant technologies and individual prior art references.

3. My background, including my resume, are discussed and appended to my earlier Declaration. As such, I do not repeat them again here.

4. All opinions and facts as stated in this Second Written Report are true and correct to the best of my knowledge, and all opinions expressed herein are my

own. If called upon to testify, I could and would testify to the truth of the following.

II. INFORMATION CONSIDERED

5. In preparing this Written Report, and in addition to my own experience, training, education, and recollections, I considered the following documents and things:

6. The Written and Supplemental Reports of Dr. Patrick Traynor, including all appendices thereto, and the papers filed by petitioners in these matters.

7. The various references as identified by Dr. Patrick Traynor in his Reports.

8. The various additional websites, sources, and documents as cited throughout my original Report, as well as those cited in this Second Written Report.

9. The Court's Claim Construction procedures and status as have been explained to me by counsel.

10. The Asserted Patents and their related file histories.

III. BRIEF SUMMARY OF OPINIONS

11. Based on my experience and training, and based on my personal analysis of the various alleged prior art references cited by Dr. Patrick Traynor and

the Asserted Claims, as well as the other documents and things as cited or referenced in this Second Written Report, it is my opinion that none of the alleged prior art references would have been combined by a POSITA in the manner described by Petitioners and Dr. Patrick Traynor. Moreover, it is my opinion (in direct contrast to the opinions of Dr. Patrick Traynor) that the various alleged prior art references and their combinations fail to teach many of the elements of the Asserted Claims, and in certain cases the proposed combinations actually lead to “unworkable” solutions, when compared with the inventions as claimed in the Asserted Claims. A POSITA would have had NO reasonable expectation of success in implementing the combination

IV. SUPPLEMENTAL OPINIONS

12. I have read the entirety of Dr. Patrick Traynor’s Supplemental Written Report, as well as the Reply prepared by Petitioners. In addition to the opinions expressed in my original Report, I offer the following supplemental opinions.

A. Web Service

13. In my opinion, the 2005 Microsoft Dictionary definition of the term “web service” reflects the standard technical definition as would have been understood by a POSITA. *See* Gajendragad [Exh. 2001] at ¶ 49.

14. The written description clearly says its protocol choice for servers was XML and HTTP (*see* Exh. 2020 at 14:10-12), and both of those protocols are part of the Microsoft web service definition in the 2005 dictionary.

15. None of the “origin server,” “digital broadcaster,” and/or “terrestrial digital video broadcasting” (e.g., DVB-T, DVB-H, ISDB-T, ATSC, etc.) networks are based on web services protocols XML or HTTP or SOAP.

B. Along With

16. A POSITA would not understand the term “along with” to mean: “inside.” In Takahashi, the “User ID” is embedded “inside” the filename. The User ID of Takahashi is *not* sent “in addition to” the filename, nor is it sent “together with” the file name. The claims plainly require that the User ID and File be separate. If filename is inside the file and inside the file header structure of the file, then filename cannot be “along with”, “in addition to” or even “together with” the file, if it is already a part of the file data inside and being part of the file header data.

17. The context in the '802 disclosure is very clear to a POSITA that all the things envisioned by the patentee to be sent “along with” cannot be “inside” the file name.

18. In Takahashi, the User ID is part of the file data, since it is embedded in the file name, whereas the claims require the file and User ID to be two different things.

C. Segment Identifier and User Identifier as Text String

19. In its Reply, Petitioner erroneously argues that “HTTP supported the use of *numeric* ‘cookies’ to identify a user, which can be limited to simply numeric identifiers without any additional text.” This is simply untrue. It is well-known to POSITA that HTTP cookies are alphanumeric text files – not simply numeric. They contain letters, numbers, and other characters that are used to store and retrieve information about a user’s browsing session. Specifically, a POSITA would readily appreciate that the values stored in cookies are typically a random string of alphanumeric characters. “Netscape Navigator stores cookies in a single text file called cookies.txt,” and “Microsoft Internet Explorer stores cookies in individual text files.” See, e.g. TTI 1007, page 285 and 287:

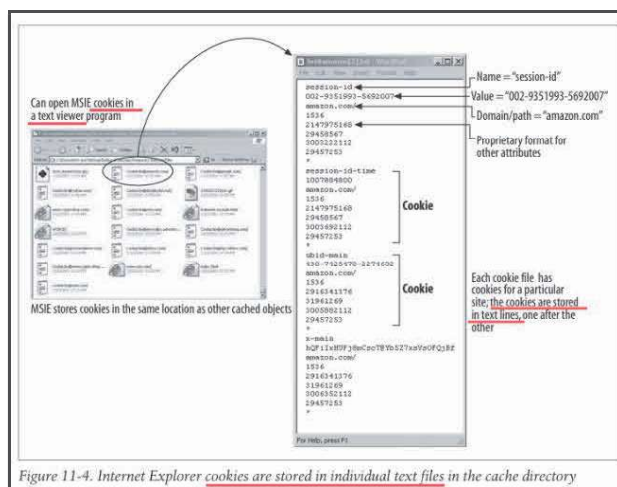


Figure 11-4: Internet Explorer cookies are stored in individual text files in the cache directory

Netscape Navigator cookies						
Different browsers store cookies in different ways. Netscape Navigator stores cookies in a single text file called <u>cookies.txt</u> . For example:						
# Netscape HTTP Cookie File						
# http://www.netscape.com/newsref/std/cookie_spec.html						
# This is a generated file! Do not edit.						
#						
# domain		allh	path	secure	expires	name value
www.fedex.com	FALSE	/	FALSE	1136109676	cc	/us/
.bankofamericaonline.com	TRUE	/	FALSE	1009789256	state	CA
.cnn.com	TRUE	/	FALSE	1035069235	SelfEdition	www
secure.eepulse.net	FALSE	/eePulse	FALSE	1007162968	cid	%FE%FF%002
www.reformant.org	TRUE	/forum	FALSE	1033761379	LastVisit	1003520952
www.reformant.org	TRUE	/forum	FALSE	1033761379	UserName	Guest
...						

20. Petitioner suggests that the “body of an HTTP message supports binary data.” This is irrelevant, as the important fact is that the HTTP “Header” is limited to text only.

21. Petitioner does NOT rely on content-data (e.g. divided-part of the image-data) to contain either a segment identifier or user identifier, because the claim requires data-content (divided-part-of-file) to be different from segment identifier and user identifier. For that reason, it does not matter if the HTTP content-data can be either encoded text or binary, what matters is encoding of the header of the HTTP, not the chunked-segmented part of the content-data. The facts known to POSITA are: (i) HTTP *body-content* (data/file-data) can be text encoded or binary encoded; and (ii) HTTP **Headers** are ONLY Text-Based NOT Binary. Indeed, Section 4.2 of HTTP RFC 2616 specifies that header fields follow a text-based format:

*Each header field consists of a name followed by a colon (":") and the field value. Field names are case-insensitive. ... field-content = <the OCTETs making up the field-value and consisting of either *TEXT or combinations of token, separators, and quoted-string>.*

22. Likewise, the TEXT rule (Section 2.2) defines header field values as sequences of octets interpreted as US-ASCII characters, with optional encoding for non-ASCII characters. This indicates that headers are designed to be text strings, not binary data. In fact, there is no provision in RFC 2616 for encoding HTTP headers themselves as binary. *See* RFC 2616 (<https://www.rfc-editor.org/rfc/rfc2616.txt>). HTTP RFC 2616 was valid from June 1999 until it was obsoleted by the publication of RFCs 7230–7235 in June 2014.

23. A POSITA would recognize that HTTP headers (not content / divided-part-of-file) before 2014 were limited to text-based strings.

D. Ground One: Aaltonen and Drescher

1. Aaltonen fails to teach “applying a segment identifier to each of said data segments at the application layer level”

24. I see no identification from the Petitioner as to what identifier *in* the data packet is supposed to be the so-called segment identifier.

25. I disagree with the notion that Aaltonen discloses any block identifiers or segment identifiers, and there is no evidence of a “segment identifier” or “block identifier” in the alleged “data packet.”

26. The Petitioner asserts that information in the “table” is the only source of segment identifier. *See* Reply (“it would have been to a POSITA that Aaltonen’s segment identifiers (e.g., tables)”). This alleged “table” is only mentioned in Aaltonen paragraph 103. Nowhere is there any indication that the alleged “table”

was sent with the “data packets” or was part of the “data packet.” Moreover, the word “table” is ONLY mentioned twice in Aaltonen and it is in paragraph 103 and only in reference to *information packets* NOT data packets. See Aaltonen at ¶ 103 (“each information packet can include a table uniquely identifying,” and “each information packet can include a table including the CRCs”). There are no “tables” in the data packet in Aaltonen.

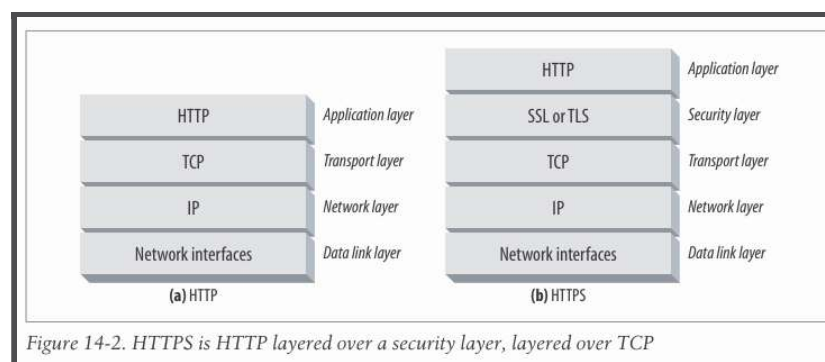
27. In Aaltonen, the “table” is still part of the UDP packet. The text relied upon by Petitioner is from paragraph 103, which recites as follows:

User Datagram Protocol (UDP), **packets may arrive** at the upload agent 110 in an order different from the order the sender 102 uploaded the packets. Conventionally, however, packets in accordance with protocols **such as UDP do not include** information relating to the Sequence of the packets or the total number of data packets that comprise the upload content 114. **Thus, in addition to the number of packets** in a block 120 of packets before or after an information packet, **each information packet** can include an identifier that identifies placement of the respective data packet in relation to the other data packets of the content. Alternatively, **each information packet can include a table** uniquely identifying the block of packets before or after the respective information packet, each of the packets referenced by the respective information packet, and the correct order of the packets. For example, **each information packet can include a table including the CRCs** or other uniquely describing data fields of the packets in the block of packets before or after the respective information packet. By directly or indirectly identifying the order of the data packets, the upload agent can Subsequently order the packets in the same order that the recipient uploaded the packets. By directly or indirectly identifying the **order of the data packets**, the upload agent can Subsequently order the packets in the same order that the recipient uploaded the packets.

28. A POSITA would recognize that the “table” inside a UDP packet that includes CRCs has NOTHING to do with a block identifier or segment identifier at the application layer.

29. Further, since “table” is part of the information packet and Aaltonen **does not require** the storage of ALL information packets, that means that NOT all Aaltonen tables are required. BUT if each “table” is a unique segment identifier, as in the challenged claims, then Aaltonen will not be able to reassemble the file without a missing table.

30. Further, using the UDP based “table” from the Aaltonen paragraph 103 that talks about UDP to assert a UDP packet table being a HTTP segment identifier is plainly incorrect. This is because of the fundamental fact that HTTP uses TCP. Petitioner’s argument is simply technically false. *See, e.g.* TTI 1007, page 329:



31. Further, the reason Aaltonen talks a lot about UDP, UDP based tables, and UDP CRC tables, is because the Aaltonen Origin Server is based on Multicast,

and Multicast is based on UDP. Again, Petitioner’s arguments are technically unsound and incorrect, as there is obviously no mention of (and no need to mention) TCP in Aaltonen.

32. Further, TCP does not need these UDP-based “tables” to alleviate the concern of paragraph 103 for the “correct order of the packets.” This is because TCP ensures data packets are received in the same order they were sent. TCP achieves this using TCP *sequence numbers* in the header of each TCP level segment, which allows the receiver to reassemble the TCP data correctly even if some TCP segments are received out of order. Each TCP segment is assigned a unique sequence number, which is used to track the order of packets in a TCP connection. The bottom line is that a UDP-based “table” that helps achieve the “*correct order of the packets*” can NEVER be a TCP Segment Identifier at TCP level, let alone HTTP application layer identifier that uses TCP as a lower layer protocol. See TTI 2006, page 150, 153:

Key Concepts of Host-to-Host Protocols		TCP/IP and the DoD Model 109	
Since we have seen both a connection-oriented (TCP) and connectionless (UDP) protocol in action, it would be good to summarize the two here. The following list highlights some of the key concepts that you should keep in mind regarding these two protocols.		The TCP header is 20 bits long. You need to understand what each field in the TCP segment is. The TCP segment contains the following fields:	
TCP	UDP	Source port	Is the port number of the host sending the data. (Port numbers will be explained a little later in this section.)
<u>Sequenced</u>	Unsequenced	Destination port	Is the port number of the application requested on the destination host.
<u>Reliable</u>	Unreliable	Sequence number	Puts the data back in the correct order or retransmits missing or damaged data, a process called sequencing.
Connection-oriented	Connectionless	Acknowledgment number	Defines which TCP octet is expected next.
Virtual circuit	Low overhead		

33. Further, “table” information in the packets, be it UDP or TCP, will always be binary. It is a known fact to POSITA that lower-level protocols (UDP,

TCP, IP, Ethernet) are almost always binary. Dr. Traynor does not recognize this, as it is not about CRC or if there is an alternative to CRC. The fact is that packet level “table” information is always binary.

34. Further, it is incorrect to say that segment identifier “tables” are attached at the application layer. Nevertheless, Petitioner contends that “[t]he identifying information in Aaltonen’s information and data packets describes blocks of packets (‘a table uniquely identifying the block of packets’).”

35. To satisfy the element 1[d] “applying segment identifiers at the application layer,” Petitioner originally relied on “these identifiers are applied to **data blocks** at the application layer level.” Now, however, Petitioner shifts reliance to simply “a table uniquely identifying the block of packets” as the so-called segment identifier. The problem for Petitioner is that in Aaltonen this “table” is only for “information packets” and they are plainly not part of data blocks (FIG 10). This alleged “table” is only mentioned in Aaltonen at paragraph 103. Nowhere in the original Petition or the Reply does Petitioner show that the alleged “table” was sent with the “data packets” or was part of the “data packet.”

36. Further, the word “table” is ONLY mentioned *twice* in Aaltonen and it is in paragraph 103, in reference to “information packets” NOT “data packets.” If Petitioner says “table” or information in the “table” is a segment identifier, then it cannot be applied at the application layer. Of course, the original Petition on page

19 requires these segment identifiers to be applied to the data blocks for it to be applied at application layer.

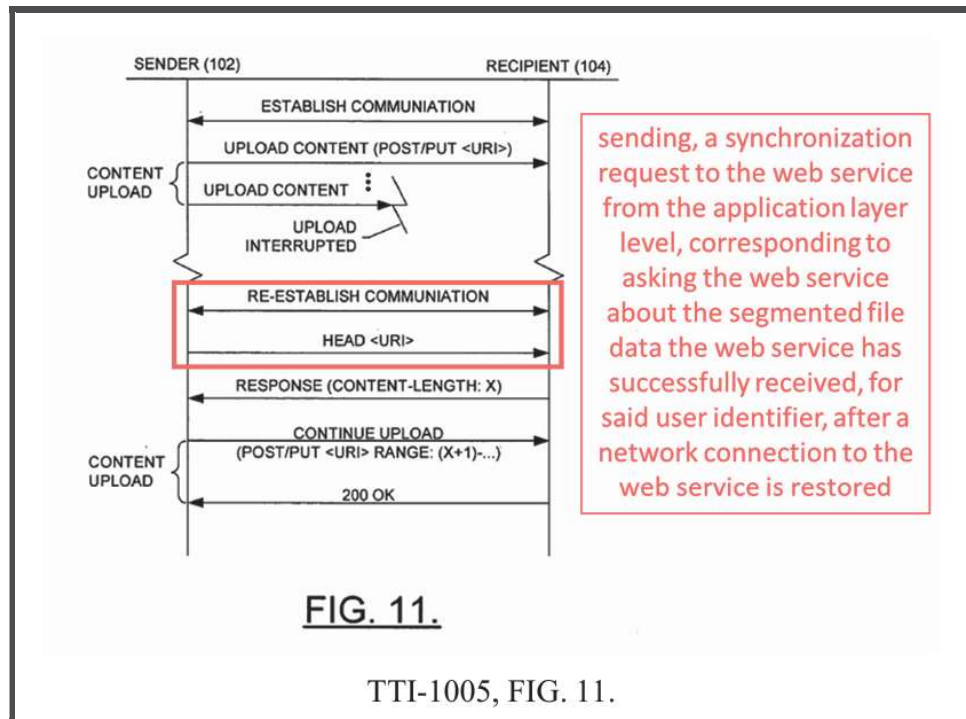
2. Aaltonen and Drescher BOTH fail to teach “applying a user identifier to each of said data segments”

37. Petitioner in its Reply is now saying that for the element 1[e] “user identifier,” it never relied on Aaltonen but ONLY on Drescher. Specifically, the Reply at 13 says “The Petition instead turned to Drescher for this limitation.” This position is simply false. The first 3 lines of the Petition for the element 1[e] on clearly show Petitioner also relying on Aaltonen as well for user identifier:

Aaltonen discloses that the “information packets” or alternatively the “data packets” within its HTTP data “blocks” (“data segments”) **include “identifiers identifying the sender.”** TTI-1005, ¶¶[0101]-[0102], [0104].

38. BUT if Petitioner is now forgoing its reliance on Aaltonen for “user identifier” then its Petition cannot meet the claim requirements 1[j] and 1[k] because both of them require “user identifier,” and the original Petition only relies on “Aaltonen.”

39. Likewise, the 00757 Petition at 23 (at 26 for 00799) (at 24 for 00760) says for Element 1[j]: “Aaltonen discloses that” and does not rely at all on Drescher. It also shows the annotated Fig 11 at 00757 Petition page 24 (at 28 for 00799) (at 25 for 00750) and highlights “HEAD URI” and annotates the text saying it shows “for said user identifier.”

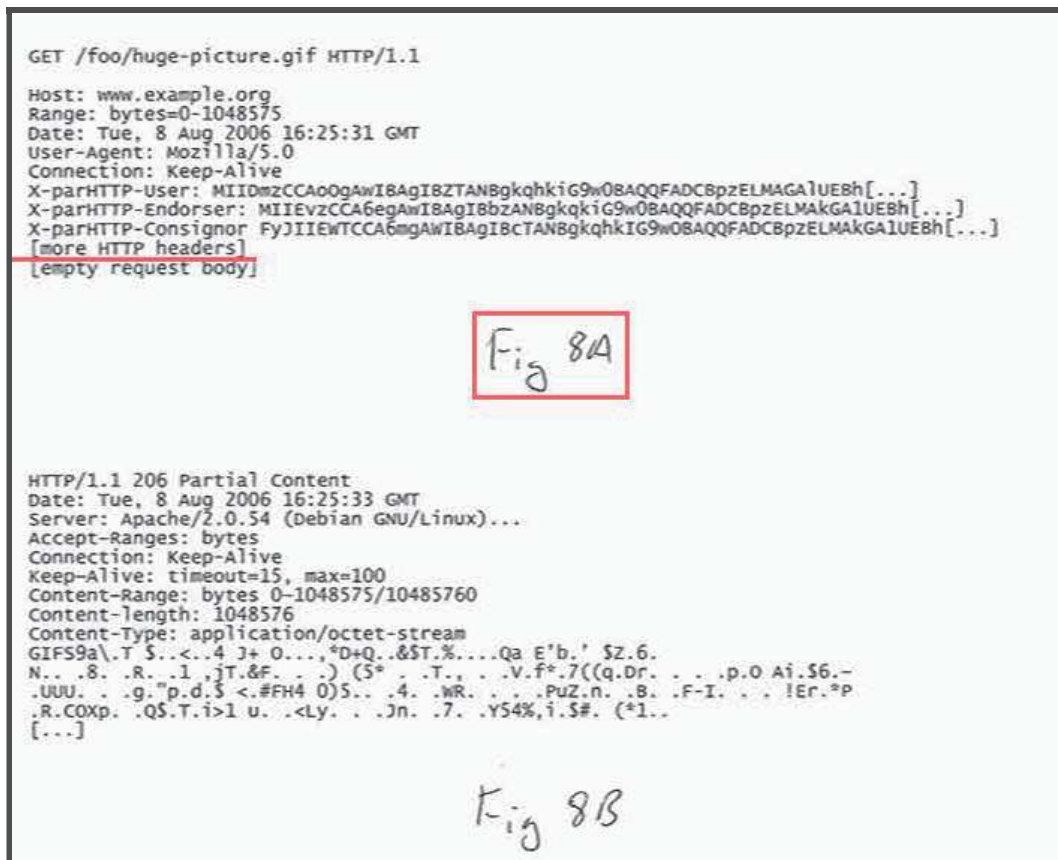


40. Similarly, page 24 of the 00757 Petition (28 for 00759) (25-26 for 00760) says for Element 1[k]: “Aaltonen discloses that.” The Petition continues: “the user identifier that identifies the sender of the upload content. TTI-1005, ¶[0102], FIG. 11.” Plainly, the Petition relies exclusively on Aaltonen text and figure.

41. Again, there is NO mention of Drescher for either element 1[j] or 1[k] in the original Petition. Again, *Petitioner changes its theories and abandons sections of its own arguments when Patent Owner points out the obvious technical flaws*. The reliance on Fig 11, and Aaltonen paragraph [0102] text in its petition clearly show reliance of Petitioner on URI as a user identifier in Aaltonen.

42. A POSITA would readily understand that the HTTP Headers and HTTP messages are completely different constructs. HTTP messages can contain multiple headers and each header usually has a different content and purpose.

43. Figures 8A and 8B of Drescher represent two different *messages* (i.e., 8A Authentication Message, and 8B Content Message). The Figures again make it clear that the additional “**more http headers**” are ONLY in 8A initial authentication messages.



44. The new theory and text referenced by Petitioner (TTI 1010, 26:32-27:2) is talking about more/additional **headers** in Figure 8A authentication

message and not 8B. There are NO more or additional headers in 8B message to repeat. Rather, more-additional headers only exist in 8A.

45. The wording in TTI 1010, 26:32-27:2 about “**repeat** that identity in the additional http headers” requires that information is present in at least ONE header in a message already. That requirement is ONLY fulfilled by the 8A initial authentication message. The “convenient” part is because each “header” in a message is handled differently. Because the parallel HTTP architecture of Drescher is completely different from the patented system, there is simply NO mention of sending user information with the content-data because authentication is handled differently in the parallel HTTP of Drescher.

E. Grounds 2A and 2B: Takahashi and Na

1. The combination of Takahashi and Na fails because it is inoperable and its elements are incompatible

46. Petitioner now suggests that Na and Takahashi purportedly work together as a combined solution. This cannot be correct, as ALL Takahashi-Na messages need to be converted into a completely different **third protocol format** “Simple Object Access Protocol (SOAP)” and use VASP services to work.

47. Petitioner’s own expert now admits that without conversion to a *third intermediate mediation SOAP protocol*, the proposed combination of Takahashi and Na cannot function as intended and as laid out in the original Petition, rendering the obviousness argument untenable. Without reimplementing

everything in SOAP and using VASP services, the combined system fails because both systems are inoperable with each other.

48. The Reply cites its expert as saying “this would have required a POSITA to convert the format of Takahashi-Na’s messages into a SOAP-friendly format.” Then, the Reply states that “[t]he SOAP format allowed for many different types of communication, beyond that provided by a simple web browser.” Still further, the Reply states that “**messaging** between MMS clients and server-based Value Added Service Providers (“**VASPs**”). The messaging for **VASP services used** the Simple Object Access Protocol (“**SOAP**”).” Finally, the Reply states that “*when the MM in question is part of a VASP, this transmission is performed with SOAP.*” This new theory now requires POSITA to incorporate and convert everything into a **third** protocol (namely, Simple Object Access Protocol (SOAP)), using new prior art and new evidence in the form of “3GPP TS 23.140” 218 pages of TTI-1030. The new theory according to Petitioner’s own expert also requires POSITA to use Value Added Service Providers (VASP) services, because MMS message used VASP services. This is new evidence and a new theory, as both conversion to SOAP and using VASP services were not part of the original Petition.

49. Even if POSITA applies Petitioner’s new theory, the Petitioner’s expert **still** leaves out what POSITA would have to do with two *incompatible*

“encoding” issues of Na and Takahashi. He also leaves out what happens (even if converted to new SOAP) to all the *Extra* Header fields and extra message fields in Na, because Petitioner’s expert recommendation is to *only convert* all Na and Takahashi “message” format to SOAP. The Takahashi server is still NOT going to understand these completely incompatible extra MMS header fields. Finally, Petitioner’s expert has no answer to how a “Filename” that is not even present in any of the Na header field can be sent to the Takahashi server.

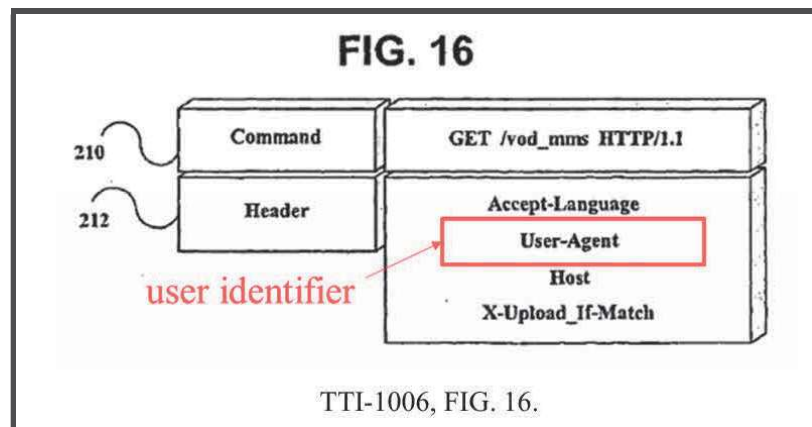
50. As discussed above, both references operate on conflicting principles *and this mismatch creates a technical barrier that cannot be bridged through routine optimization (Petitioner new theory validates this view)*. Overcoming this incompatibility demands significant innovation. Here, no POSITA would pursue a combination that leads to such a clear and predictable failure and requires a conversion to a *third mediation protocol and use of VASP services*.

51. In the instant case, the cited art combination teaches *away* from the claimed invention by suggesting an unworkable result without the implementation of a third mediation protocol, when combining MMS message and encoding architecture that is completely different from Takahashi regular web. The prior art combination is inoperable and its components incompatible as admitted by Petitioner’s own expert.

2. Inconsistent “User Identifier” mapping throughout the Petition

52. With respect to the “User ID” of element 1[c], the original Petition relied on Takahashi to send the “Filename”.

53. With respect to the “User ID” of element 1[j], the original Petition relied on the “Terminal Number” and “User Agent.” The term “terminal number” is only mentioned three (3) times in the whole Petition: two times for claim 1 element 1[j], and one time for claim 4. There is zero mention of “terminal number” for element 1[e] or element 1[k]. Rather, the original Petition heavily relied on “User Agent” for its user information, including in reference to the figures:



54. Because the original Petition relied on the messages of Na for Element 1[j], the Takahashi filename embedded User ID cannot be used. This is because there is NO way to send a filename in Na MMS header or MMS Messages.

55. For the “User ID” of element 1[k], the original Petition only relied on “user agent information,” with zero mention of “terminal number” or “filename.” Once again, the term “terminal number” is only mentioned three (3) times in the whole Petition: two times for claim 1 element 1[j], and one time for claim 4. There is absolutely NO mention of “terminal number” for element 1[e] or element 1[k]. Once again, filename user ID cannot be sent in Na Messages because there is NO file or file name in Na that is sent to MMS servers. There is also no explanation of why and how filenames will be sent or IF any file name is sent in Na messages.

56. In sum, it is my opinion that none of the Asserted Claims are rendered obvious by the cited references, or any combination thereof.

57. All opinions expressed in this Written Report are my own. If called upon to testify, I could and would testify in accordance with the opinions expressed herein, and as further supported and elaborated upon in the accompanying Exhibits.

V. SUMMARY AND CONCLUSION

58. As set forth herein, it is my opinion that none of the Challenged Claims are rendered obvious by any combination of art cited in the Petition.

59. It is my further opinion that all of the Challenged Claims are fully supported by the written description.

60. END OF WRITTEN PORTION OF REPORT