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UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WAG ACQUISITION, L.L.C.,

Plaintiff,

v.

ICF TECHNOLOGY GROUP INC.,

Defendant.

No.

**COMPLAINT FOR PATENT
INFRINGEMENT**

1. Plaintiff WAG ACQUISITION, L.L.C. (“Plaintiff” or “WAG”), for its complaint against Defendant ICF TECHNOLOGY GROUP INC. (“Defendant”), alleges infringement of United States Patent No. 10,567,453 (the “453 patent”), owned by WAG.

I. INTRODUCTION

2. Defendant, on behalf of, and as a part of, an enterprise known as “Accretive Technology Group,” involving Defendant and other entities, operates a global network of live interactive webcam performers and internet sites, including without limitation consumer-facing web sites such as streamate.com, jerkmate.com, and numerous additional specialized, “white label” and other web sites, for which the video feeds linked by those sites originate from media servers operated and/or controlled by Defendant.

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3. Plaintiff alleges that Defendant's internet delivery of streaming video from its media servers, including media servers in the United States, has deployed and used methods of operation, systems, and computer-recorded media, for the internet streaming of live webcam video, which incorporate the apparatus, methods, and networking protocols in a manner that infringes the '453 patent, as more particularly set forth herein. WAG sues for appropriate monetary relief due to Defendant's unauthorized use and willful infringement during the term of the '453 patent.

II. THE PARTIES

4. Plaintiff WAG Acquisition, L.L.C. is a New Jersey limited liability company with its principal place of business at 275 Route 10 East, Suite 220-313, Succasunna, New Jersey 07876.

5. On information and belief, Defendant ICF Technology, Inc. is a Washington corporation with offices at 800 Stewart Street, Seattle, Washington 98101.

III. JURISDICTION AND VENUE

6. The Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

7. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b)-(c) and 1400(b) because Defendant has a regular and established place of business in this District and has committed acts of infringement by reason, *inter alia*, of having acted in this District to build, configure, operate, and maintain streaming media servers which give rise to the infringement alleged in this case, in this District and elsewhere in the United States. Upon information and

1 belief, the majority of Defendant’s employees work within this District and the majority of its
2 business records are maintained within this District.

3 8. Defendant is subject to personal jurisdiction in Washington and this District
4 because it is an entity organized under the laws of Washington. Defendant is further subject to
5 personal jurisdiction in Washington because it conducts business in Washington, at least by
6 offering for sale and selling products and services through Defendant’s web sites and related
7 facilities, which are accessible in Washington, and it has committed acts of infringement in
8 Washington by operating servers in Washington by methods, and with apparatus and computer-
9 readable media, that infringed the ’453 patent.

10 **IV. THE ’453 PATENT**

11 9. The ’453 patent was duly and legally issued on February 18, 2020, and was in
12 effect until it expired on September 4, 2022.

13 10. The subject matter claimed in the ’453 patent was developed in the course of
14 Plaintiff’s business and all rights therein were assigned by Harold Price (the inventor) to
15 Plaintiff’s predecessor in that business. Plaintiff owns all rights to recover for past infringement
16 of the ’453 patent.

17 11. The ’453 patent concerns a technological solution to a problem that Plaintiff’s
18 predecessor, SurferNETWORK, perceived in the streaming media implementations that
19 characterized the prior art. Prior to this invention, internet streaming implementations suffered
20 from slow, stuttering startup and frequent interruptions. When a user first clicked to begin
21 playback of streaming media, a significant period of “buffering” would begin, during which
22 period the user would typically only see an hourglass. After clicking on a stream, the user would
23 have to wait until the player accumulated sufficient content over its internet connection for the
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1 program to start, and this process would often have to be repeated if line conditions caused the
2 buffer to run out during playback. These effects resulted in a poor user experience and greatly
3 disadvantaged internet streaming media as compared to other forms of audio and/or video
4 media, such as radio and TV. Numerous efforts were made by others to improve the situation
5 by attempting to control (*e.g.*, meter) the rate of delivery of media from the server to match to
6 inferred needs and capabilities of the player, but these efforts continued to suffer from
7 significant delays for the player to build up an initial buffer, and proved unable to respond
8 adequately to unexpected changes in internet connection quality.

9 12. SurferNETWORK sought a solution that would jump start internet media
10 playback to achieve the perception of “Instant On,” and provide an internet user an experience
11 akin to what ordinarily happened when turning on a transistor radio. The ’453 patent addresses
12 the identified shortcomings in the prior art, providing an internet streaming user experience that
13 would then be comparable to the immediacy and continuity that the user enjoyed with ordinary
14 radio and television. It accomplished this, in one embodiment, by techniques that included
15 without limitation rearranging the order of operations in the streaming media server in an
16 innovative manner, to pre-buffer the media on the server side of the connection (where this
17 could be done on the server side with very little or no perceived delay on the part of the user),
18 and then taking full advantage of the underlying transport mechanism of the server.

19 13. The ’453 patent claims provide the improvements described above by a
20 combination of specific measures.

21 14. A buffer is provisioned in the memory of a server and is continuously filled at
22 the playback rate (“filling a server buffer allocated in a memory of the server, from a media
23 source, at a constant fill rate equal to the playback rate”).
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15. Once the server buffer has been filled to a predetermined level, streaming delivery may begin: “beginning delivery of the streaming media to the user computer using a transport mechanism to send sequential data elements of the streaming media from the server buffer to the user computer.”

16. The actual streaming transmission is of “unsent sequential data elements in the server buffer.” There may be “unsent” elements in the server buffer under a variety of circumstances, *e.g.*, (i) at the startup of streaming, when (per ¶ 15) the server buffer has been pre-filled, the entire pre-filled amount resides in the server buffer and is “unsent”; and (ii) after startup, as further elements arrive (one-by-one) in the server buffer, at the playback rate, each element thus arriving (one-by-one) is “unsent.” In addition, more than the successive individual elements may accumulate in the server buffer as a result of an interruption during the course of delivery in situations where the transport mechanism temporarily stops accepting media data elements, and these elements will thus be “unsent” as well.

17. In each case as addressed in the foregoing paragraph, according to the claims, the unsent elements in the server buffer are sent to the user system as fast as possible, over the given transport mechanism. Specifically, whenever there are “unsent sequential data elements in the server buffer,” the claims prescribe “sending, from the server to the user computer, as much of said unsent sequential data elements that are in the server buffer as said transport mechanism will accept, at a sending rate in excess of the playback rate.”

18. In contrast to the prior art, the claimed combination of measures does not rely on trying to impose a sustainable streaming rate by measures such as “metering” the sending of successive elements, which had proved unreliable in prior practice. Rather, the result of the claimed combination of measures is a dual streaming moderation mechanism, which couples a

1 flow limitation on the input side of a server buffer (that of constantly filling the server buffer at
2 the playback rate, but only starting the streaming delivery after pre-filling a buffer-load of data),
3 with a complementary but different control mechanism on the output side (the server's transport
4 mechanism), provided over a connection that is capable of transmitting faster than the playback
5 rate when there are a unsent elements to be sent, but where the transport can adapt delivery to
6 accommodate network conditions. The claimed combination of these measures proved to meet
7 the objects of the invention in a manner that could not be achieved in the prior art.

8 19. The claims are thus directed at using a particular, novel, transmission
9 mechanism that achieves the objects of a user perception of fast streaming startup and
10 uninterrupted delivery. These specific technological measures, operating dynamically in
11 tandem, and the operational characteristics that result therefrom, improve the speed and
12 reliability of how the user and server computers communicate. They utilize the computer
13 components in each such computer to interoperate in a different way than they did in prior
14 approaches. The result is a smooth delivery mechanism (despite the unpredictability of the
15 delivery medium between the server and the player(s)), which also provides a fast startup,
16 thereby improving how computers communicate.

17 **V. COUNT I: DIRECT INFRINGEMENT OF THE '453 PATENT**

18 20. Plaintiff repeats and realleges the allegations of paragraphs 1-19 above as if fully
19 set forth at length herein.

20 21. Defendant, through its servers as aforesaid, has infringed the '453 patent by
21 making, selling, offering to sell, performing, and using apparatuses, articles, and methods that
22 embody one or more claims thereof, without authorization and in the United States, during the
23 term thereof (as alleged herein), by conduct as hereinafter more particularly alleged.
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22. Prior to the issuance of the '453 patent (but considerably after the '453 patent's
priority date), Defendant began to operate servers that utilize the MEOW protocol (a proprietary
protocol) and WebRTC protocols (an industry standard protocol), employing the buffering
(temporary storage) scheme claimed in the '453 patent, to control transmission of streaming
media to achieve fast startup of the playback and uninterrupted delivery. Defendant achieved
these objects by separate combinations of the way in which Defendant buffered and sent
streaming media on and from its servers, with transport (in distinct embodiments) through each
the two said protocols, each in a manner that infringed the '453 patent. Defendant continued to
operate servers in said infringing manners throughout the life of the '453 patent.

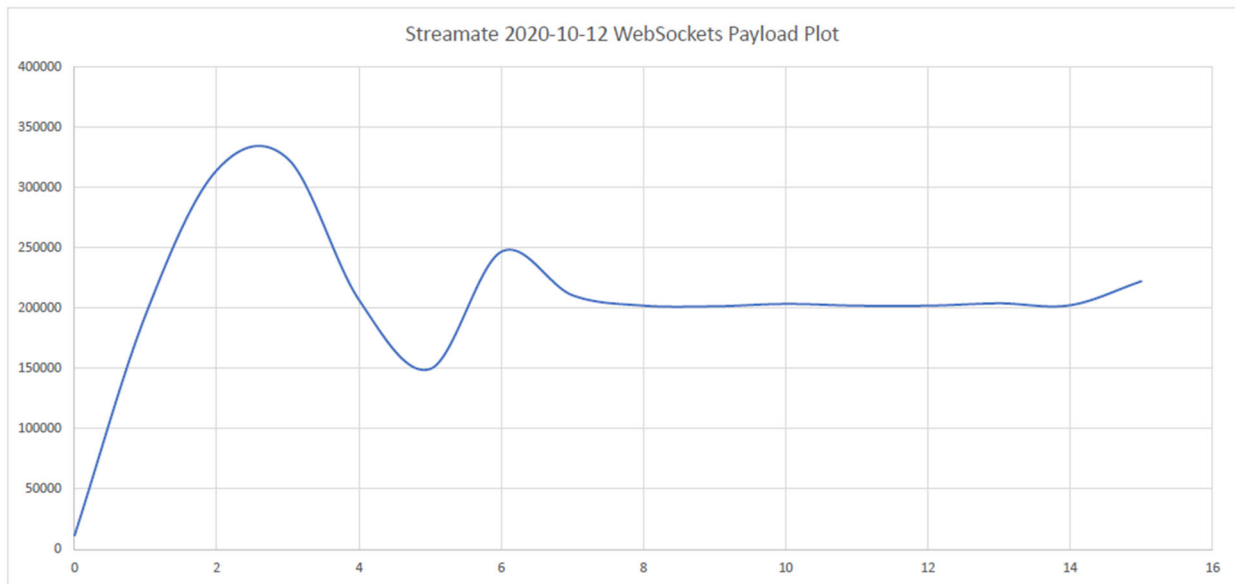
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23. Inspection of requests, responses, and packets exchanged between a sample user
system and Defendant's servers shows that Defendant's streaming implementation that utilized
both the MEOW and WebRTC protocols on the servers referenced in ¶ 22, during the time
period referenced therein, infringed the '453 patent.

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24. With reference, for example, to claim 1 of the '453 patent, the following two
figures show data from a representative packet capture from a MEOW streaming session with
Defendant's streamate.com website:

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The screenshot displays a network analysis tool interface. On the left, a 'Structure' pane shows a sequence of requests from various domains, including streamato.com, cdn.simg.net, and sea-29.nginxborder-server.naiadsystems.com. The right pane shows a detailed view of a selected WebSocket connection. The 'Overview' tab is active, displaying a table of connection details.

Name	Value
URL	wss://sea-29.nginxborder-server.naiadsystems.com/p/8323/meowd/1
Status	Complete
Response Code	101 Switching Protocols
Protocol	HTTP/1.1
TLS	TLSv1.2 (TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256)
Protocol	TLSv1.2
Session Resumed	No (Client session resumed, server session restarted)
Cipher Suite	TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
ALPN	-
Client Certificates	-
Server Certificates	2
Extensions	-
Method	GET
Kept Alive	No
Content-Type	-
Client Address	127.0.0.1:61292
Remote Address	sea-29.nginxborder-server.naiadsystems.com(207.66.135.179:443)
Tags	-
Connection	-
Client Connection	#537610824
Server Connection	#717339013
WebSockets	464 messages (0 sent, 464 received)
Origin	https://www.streamato.com
Version	13
Protocol	-
Extensions	permessage-deflate; client_max_window_bits
Messages Sent	0
Messages Received	464
Control Frames Sent	0
Control Frames Received	0
Timing	-
Size	-
Request	2.07 KB (2,117 bytes)
TLS Handshake	1.31 KB (1,342 bytes)
Header	775 bytes
Query String	175 bytes
Cookies	-
Body	-
Uncompressed Body	-
Compression	-
Response	10.28 MB (10,776,357 bytes)
TLS Handshake	14.90 KB (15,253 bytes)
Header	0 bytes
Cookies	-
Body	10.26 MB (10,761,144 bytes)
Uncompressed Body	-
Compression	-
Total	10.26 MB (10,776,514 bytes)



11 25. The above figures reflect the distribution via the Internet, under the MEOW
12 protocol, of streaming media, encoded as a plurality of sequential frames adapted for playback
13 at a predetermined playback rate and comprising a plurality of sequential data elements.

14 26. On information and belief, Defendant maintained ongoing feeds to its bank of
15 servers from a plurality of live performers, and buffered each of the incoming streams on its
16 servers (“filling a server buffer allocated in a memory of the server, from a media source, at a
17 constant fill rate equal to the playback rate”).

18 27. At time “zero” (as shown in the second above figure), the server “receiv[es] via
19 data communications at a server a request from a user computer for the streaming media. As
20 the server buffer, due to the ongoing live nature of the stream, has already been “filled to a
21 predetermined level” when the user request comes in, the server “begin[s] delivery of the
22 streaming media to the user computer.”

23 28. The server delivered the requested stream “using a transport mechanism,” which
24 in the case of MEOW is a websocket over TCP (wss:// websocket protocol), as reflected in the

1 right panel of the first figure above. The server uses a websocket “to send sequential data
2 elements of the streaming media from the server buffer to the user computer” (see the “live”
3 elements in the first figure).

4 29. At the beginning, during streaming startup, there is a buffer-load of “unsent
5 sequential elements in the server buffer.” As reflected by the observed higher speed of
6 transmission during startup (second figure), the transport mechanism accepts elements in the
7 initial buffer load, and sends them at higher than the playback rate (“whenever, after said
8 beginning delivery of the streaming media to the user, there are unsent sequential data elements
9 in the server buffer, sending, from the server to the user computer, as much of said unsent
10 sequential data elements that are in the server buffer as said transport mechanism will accept,
11 at a sending rate in excess of the playback rate”). The higher rate of this initial phase of delivery
12 is reflected in the visible surge or burst on streaming startup, and confirmed by the timestamps
13 on the received packets, which show that the data corresponding to the initial burst is
14 transmitted and received in less time than it takes to play that data back. Following this initial
15 period, the steady trace at the right of the panel reflects continuing transmission at the playback
16 rate.

17 30. The websocket sends each such individual element to the player, when it sends
18 it, at full line speed, but in this case the throughput is limited by the rate of arrival of the
19 following elements from the performer’s feed (*i.e.*, the playback rate), so net transmission at
20 the subsequent stage of the transmission is at the playback rate.

21 31. With reference, again for example, to claim 1 of the ’453 patent, the following
22 two figures show data from a representative packet capture from a WebRTC streaming session
23 with Defendant’s streamate.com website:
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1 32. The above figures reflect the distribution via the Internet, under the WebRTC
2 protocol, of streaming media, encoded as a plurality of sequential frames adapted for playback
3 at a predetermined playback rate and comprising a plurality of sequential data elements.

4 33. On information and belief, as in its MEOW implementation (addressed above),
5 Defendant likewise maintained, for its WebRTC implementation, ongoing feeds to its bank of
6 servers from a plurality of live performers, and buffered the incoming streams on its servers
7 (“filling a server buffer allocated in a memory of the server, from a media source, at a constant
8 fill rate equal to the playback rate”).

9 34. At time “zero” (see second figure), the server “receiv[es] via data
10 communications at a server a request from a user computer for the streaming media.” The server
11 buffer having already been “filled to a predetermined level,” the server “begin[s] delivery of
12 the streaming media to the user computer.”

13 35. The server delivers the requested stream “using a transport mechanism,” which
14 in the case of WebRTC is the WebRTC protocol, “to send sequential data elements of the
15 streaming media from the server buffer to the user computer” (see first figure, ¶ 2431).

16 36. At the beginning, during streaming startup, there is a buffer-load of “unsent
17 sequential elements in the server buffer.” As reflected by the observed higher speed of
18 transmission (an initial burst) during startup (second figure), the transport mechanism sends
19 these elements faster than the playback rate (“whenever, after said beginning delivery of the
20 streaming media to the user, there are unsent sequential data elements in the server buffer,
21 sending, from the server to the user computer, as much of said unsent sequential data elements
22 that are in the server buffer as said transport mechanism will accept, at a sending rate in excess
23 of the playback rate”). Timestamps on the received packets confirm that the data corresponding
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1 to the initial startup section of the graph is transmitted and received in less time than it takes to
2 play them back.

3 37. Further (per claims 8, 16, and 24), Defendant’s servers’ distribution of live
4 streams are in most cases directed to a plurality of user systems (plurality of users watching the
5 same performer at the same time). The analysis of packets, requests, and responses, and the fact
6 that the individual user systems are not making additional requests at the application layer,
7 reflects that, for both the MEOW and WebRTC implementations, where the receiving user
8 system is one of a plurality of user systems observing the same live feed, for each of the plurality
9 of user systems, the corresponding Defendant server maintains a record of the last streaming
10 media data element that had been sent from the server buffer of that server to the user system,
11 and uses the record to identify the next streaming media data element in that server buffer to be
12 sent to the user system, doing this for a plurality of users viewing the same performance. Both
13 the Defendant’s MEOW implementation and its WebRTC implementation employed a
14 transport mechanism operating in accordance with a reliable transport protocol as recited in
15 claims 9 and 17. Defendant’s servers perform these and other functions in a manner that meets
16 each and every limitation of at least claims 1, 3, 4, 8, 9, 11, 12, 16, 17, 19, 20, and 24 of the
17 ’453 patent, thereby directly infringing those claims, either literally or under the doctrine of
18 equivalents.

19 38. Plaintiff accuses of infringement every server made, provisioned, operated,
20 maintained, or used by Defendant to serve streaming media via the Accused Protocols, and
21 every web site, whether owned or commercially affiliated, original, white-label, or otherwise,
22 for which audio and/or video is served by said servers by way of any acts of making, using,
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1 offering for sale or selling such servers, services of such servers, or related systems or tangible
2 media, in or connected to the U.S., during the term of the '453 patent.

3 39. Pursuant to 35 U.S.C. § 284, Plaintiff is entitled to not less than a reasonable
4 royalty for the use made by Defendant under the '453 patent, in an amount subject to proof at
5 trial, together with interest and costs as fixed by the Court.

6 40. Plaintiff has complied with all applicable marking provisions of 35 U.S.C.
7 § 287(a) during the entire term of the '453 patent.

8 41. Plaintiff is entitled to recover all past damages so sustained by Plaintiff as a
9 result of the infringement alleged herein.

10 **VI. COUNT II: WILLFUL INFRINGEMENT**

11 42. Plaintiff repeats and realleges the allegations of paragraphs 1-41 above as if fully
12 set forth at length herein.

13 43. Defendant has in the past challenged others of Plaintiff's patents in
14 administrative proceedings and its filings therein reflect that it was monitoring developments
15 in the family of the '453 patent and thus was aware of the issuance of the '453 patent in 2020.
16 Defendant either continued its use of the Accused Protocols in deliberate disregard of its
17 knowledge of the issuance and its own infringement of the '453 patent, or was willfully blind
18 to its infringement of the '453 patent by continued use of the Accused Protocols. In either case,
19 Defendant was aware or should have been aware at least from the date(s) of notice as alleged
20 herein that there was an objectively high likelihood that its actions thereafter constituted patent
21 infringement. Defendant has no good faith basis to believe that its continuing conduct as alleged
22 herein does not constitute patent infringement.
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1 44. Defendant’s infringement from the issue date of the ’453 patent as alleged above
2 was willful and deliberate, entitling Plaintiff to increased damages under 35 U.S.C. § 284.

3 45. Defendant’s willful infringement further renders this an exceptional case under
4 35 U.S.C. § 285, which entitles Plaintiff to an award of reasonable attorneys’ fees.

5 **VII. DEMAND FOR JURY TRIAL**

6 Plaintiff demands trial by jury on all issues.

7 **VIII. PRAYER FOR RELIEF**

8 WHEREFORE, Plaintiff WAG ACQUISITION, L.L.C. requests an entry of judgment
9 in its favor and against Defendant as follows:

- 10 a. Declaring that Defendant has infringed one or more claims of United States Patent No.
- 11 10,567,453 during the term thereof;
- 12 b. Declaring that Defendant’s infringement was willful, and awarding enhanced damages
- 13 at least from the filing of this action as a result of that willfulness under 35 U.S.C. §
- 14 284, against Defendant;
- 15 c. Awarding to Plaintiff the past damages arising out of Defendant’s infringement of
- 16 United States Patent No. 10,567,453;
- 17 d. Awarding attorneys’ fees, costs, or other damages pursuant to 35 U.S.C. §§ 284 or 285
- 18 or as otherwise permitted by law, against the Defendant;
- 19 e. Awarding costs in this action to Plaintiff; and
- 20 f. For such other and further relief as the Court may deem just and proper.

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Dated: January 27, 2023

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