# GUEST TEK INTERACTIVE ENTERTAINMENT LTD.
# v.
# NOMADIX, INC.

Case IPR2019-00211 (Patent 7,953,857)
Case IPR2019-00253 (Patent 8,626,922)

# NOMADIX'S DEMONSTRATIVES

Judge Sally C. Medley
Judge Daniel J. Galligan
Judge Jason W. Melvin

February 25, 2020

**Nomadix Ex. 2008**
Guest Tek v. Nomadix
IPR2019-00211 and -00253

# CLAIM CONSTRUCTION

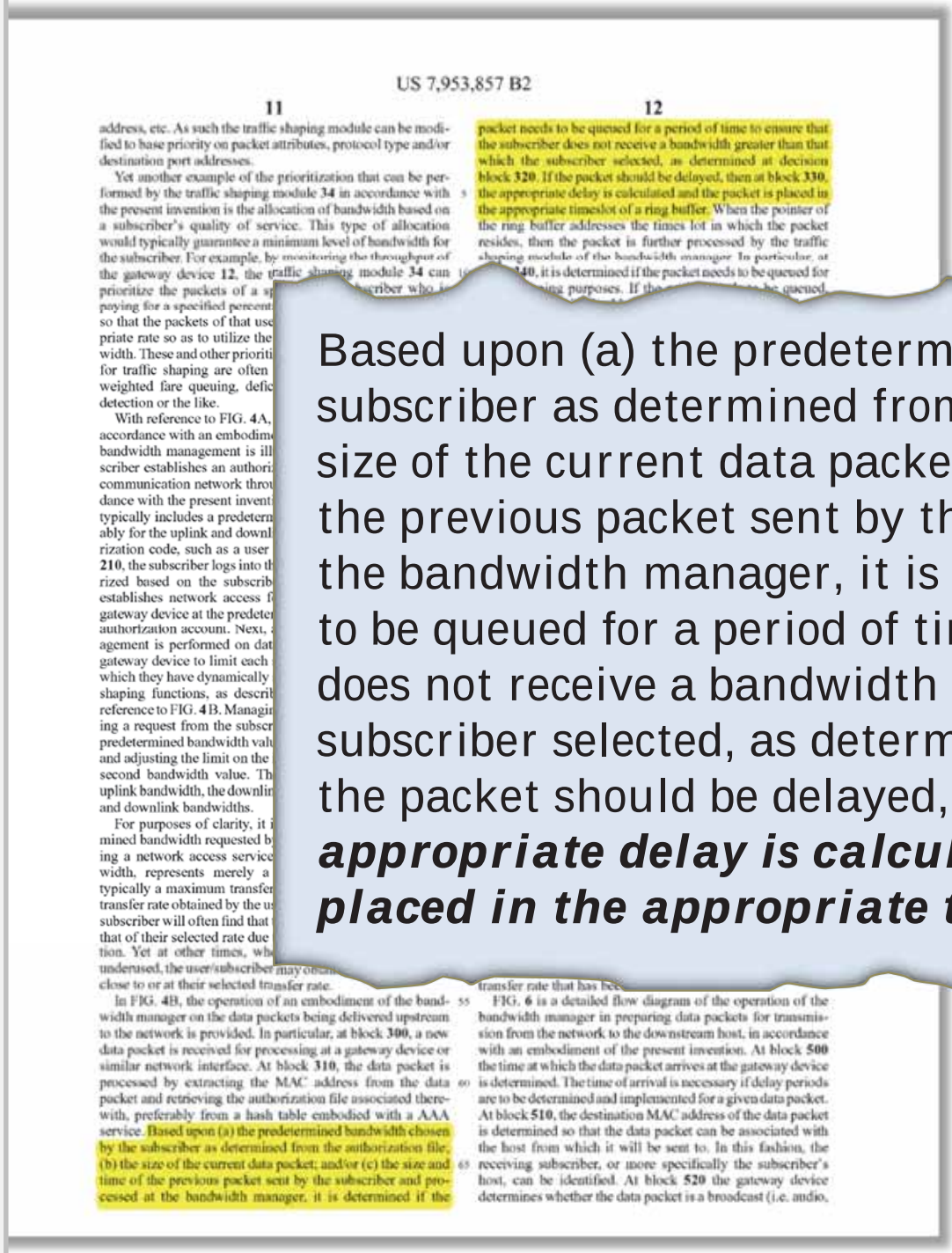
"calculating a delay period"

requires calculating a length of time



Response at 10-13
Sur-reply at 2-7

’857 patent



US 7,953,857 B2

11 12

address, etc. As such the traffic shaping module can be modified to base priority on packet attributes, protocol type and/or destination port addresses.

Yet another example of the prioritization that can be performed by the traffic shaping module **34** in accordance with the present invention is the allocation of bandwidth based on a subscriber's quality of service. This type of allocation would typically guarantee a minimum level of bandwidth for the subscriber. For example, by monitoring the throughput of the gateway device **12**, the traffic shaping module **34** can prioritize the packets of a subscriber who is paying for a specified percentage so that the packets of that user receive the appropriate rate so as to utilize the bandwidth. These and other prioritization for traffic shaping are often weighted fare queuing, deficit detection or the like.

With reference to FIG. **4**A, in accordance with an embodiment bandwidth management is illustrated. A subscriber establishes an authorization communication network through dance with the present invention typically includes a predetermined ably for the uplink and downlink rization code, such as a user **210**, the subscriber logs into the rized based on the subscriber establishes network access for gateway device at the predetermined authorization account. Next, agement is performed on data gateway device to limit each which they have dynamically shaping functions, as described reference to FIG. **4** B. Managing a request from the subscriber predetermined bandwidth value and adjusting the limit on the second bandwidth value. The uplink bandwidth, the downlink and downlink bandwidths.

For purposes of clarity, it is mined bandwidth requested by ing a network access service width, represents merely a typically a maximum transfer transfer rate obtained by the user subscriber will often find that that of their selected rate due tion. Yet at other times, when underused, the user/subscriber may close to or at their selected transfer rate.

In FIG. **4**B, the operation of an embodiment of the bandwidth manager on the data packets being delivered upstream to the network is provided. In particular, at block **300**, a new data packet is received for processing at a gateway device or similar network interface. At block **310**, the data packet is processed by extracting the MAC address from the data packet and retrieving the authorization file associated therewith, preferably from a hash table embodied with a AAA service. Based upon (a) the predetermined bandwidth chosen by the subscriber as determined from the authorization file, (b) the size of the current data packet; and/or (c) the size and time of the previous packet sent by the subscriber and processed at the bandwidth manager, it is determined if the packet needs to be queued for a period of time to ensure that the subscriber does not receive a bandwidth greater than that which the subscriber selected, as determined at decision block **320**. If the packet should be delayed, then at block **330**, the appropriate delay is calculated and the packet is placed in the appropriate timeslot of a ring buffer. When the pointer of the ring buffer addresses the times lot in which the packet resides, then the packet is further processed by the traffic shaping module of the bandwidth manager. In particular, at **340**, it is determined if the packet needs to be queued for shaping purposes. If the packet needs to be queued, transfer rate that has been

FIG. **6** is a detailed flow diagram of the operation of the bandwidth manager in preparing data packets for transmission from the network to the downstream host, in accordance with an embodiment of the present invention. At block **500** the time at which the data packet arrives at the gateway device is determined. The time of arrival is necessary if delay periods are to be determined and implemented for a given data packet. At block **510**, the destination MAC address of the data packet is determined so that the data packet can be associated with the host from which it will be sent to. In this fashion, the receiving subscriber, or more specifically the subscriber's host, can be identified. At block **520** the gateway device determines whether the data packet is a broadcast (i.e. audio,

Based upon (a) the predetermined bandwidth chosen by the subscriber as determined from the authorization file; (b) the size of the current data packet; and/or (c) the size and time of the previous packet sent by the subscriber and processed at the bandwidth manager, it is determined if the packet needs to be queued for a period of time to ensure that the subscriber does not receive a bandwidth greater than that which the subscriber selected, as determined at decision block 320. If the packet should be delayed, then ***at block 330, the appropriate delay is calculated and the packet is placed in the appropriate timeslot of a ring buffer***.

Ex. 1001[1] at col. 11 l. 63 - col. 12 l. 6
[1]All citations are to exhibits and papers from IPR2019-00211 unless otherwise indicated.

Ex. 2004 ¶¶ 29-32
Response at 10-13

’857 patent

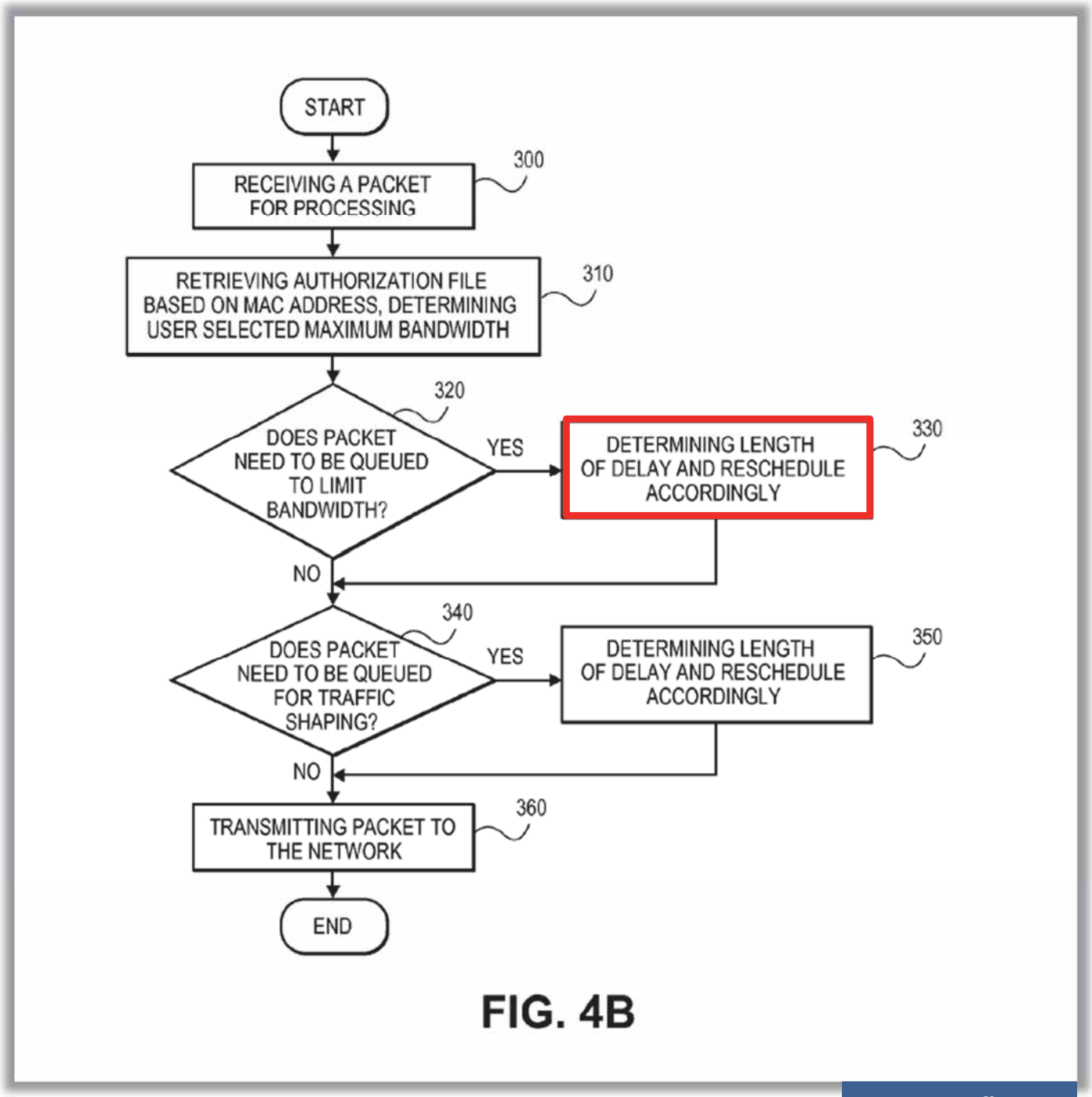



FIG. 4B

Ex. 1001 fig. 4B

Ex. 2004 ¶¶ 29-32
Response at 10-13

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