EXHIBIT 3

HBCU MESSAGING US'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,089,450 – Apple Inc.

Claim 6

HBCU Messaging US LP ("HBCU") provides evidence of infringement of claim 1 of U.S. Patent No. 11,089,450 (hereinafter "the '450 patent") by Apple Inc. ("Apple"). In support thereof, HBCU provides the following claim charts.

"Accused Instrumentalities" as used herein is defined in HBCU's Complaint. It is further understood, on information an belief, that Apple retains ownership of all relevant Apple-provided software on user's Apple devices, and that such software is responsible, in material part, for the functionality of those devices.

These claim charts demonstrate Apple's infringement, and provide notice of such infringement, by comparing each element of the asserted claims to corresponding components, aspects, and/or features of the Accused Instrumentalities. These claim charts are not intended to constitute an expert report on infringement. These claim charts include information provided by way of example, and not by way of limitation.

The analysis set forth below is based only upon information from available resources regarding the Accused Instrumentalities, as Apple has not yet provided any further non-public information. An analysis of Apple's (or other third parties') technical documentation and/or software source code may assist in fully identifying all infringing features and functionality. Accordingly, HBCU reserves the right to supplement this infringement analysis once such information is made available to HBCU. Furthermore, HBCU reserves the right to revise this infringement analysis, as appropriate, upon issuance of a court order construing any terms recited in the asserted claims. HBCU provides this evidence of infringement and related analysis without the benefit of claim construction or expert reports or discovery. HBCU reserves the right to supplement, amend or otherwise modify this analysis and/or evidence based on any such claim construction or expert reports or discovery.

Unless otherwise noted, HBCU contends that Apple directly infringes the '450 patent in violation of 35 U.S.C. § 271(a) by selling, offering to sell, making, using, and/or importing the Accused Instrumentalities. The following exemplary analysis demonstrates that infringement. Unless otherwise noted, HBCU further contends that the evidence below supports a finding of indirect infringement under 35 U.S.C. §§ 271(b) and/or (c), in conjunction with other evidence of liability under one or more of those subsections. Apple makes, uses, sells, imports, or offers for sale in the United States, or has made, used, sold, imported, or offered for sale in the past, without authority, or induces others to make, use, sell, import, or offer for sale in the United States, or has induced others to make, use, sell, import, or offer for sale in the past, without authority products, equipment, or services that infringe at least claim 1 of the '450 patent, including without limitation, the Accused Instrumentalities.

Unless otherwise noted, HBCU believes and contends that each element of each claim asserted herein is literally met through Apple's provision of the Accused Instrumentalities. However, to the extent that Apple attempts to allege that any asserted claim element

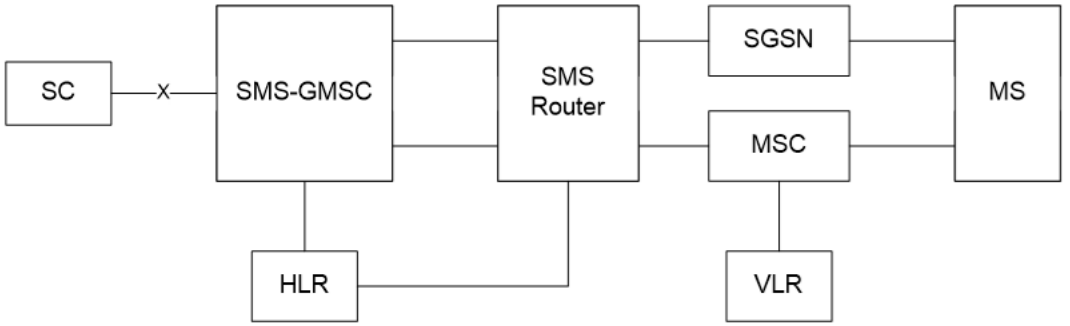
is not literally met, HBCU believes and contends that such elements are met under the doctrine of equivalents. More specifically, in its investigation and analysis of the Accused Instrumentalities, HBCU did not identify any substantial differences between the elements of the patent claims and the corresponding features of the Accused Instrumentalities, as set forth herein. In each instance, the identified feature of the Accused Instrumentalities performs at least substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim element.

To the extent the chart of an asserted claim relies on evidence about certain specifically identified Accused Instrumentalities, HBCU asserts that, on information and belief, any similarly functioning instrumentalities also infringes the charted claim. HBCU reserves the right to amend this infringement analysis based on other products made, used, sold, imported, or offered for sale by Apple. HBCU also reserves the right to amend this infringement analysis by citing other claims of the '450 patent, not listed in the claim chart, that are infringed by the Accused Instrumentalities. HBCU further reserves the right to amend this infringement analysis by adding, subtracting, or otherwise modifying content in the "Accused Instrumentalities" column of each chart.

Claim 1	Accused Instrumentalities
1. A method comprising:	The Accused Instrumentalities perform the method of claim 1.
receiving a first message, by a first mobile wireless device from a second mobile wireless device, via a mobile operator base station, wherein the first message is formatted according to a short message service (SMS) format;	The Accused Instrumentalities receive a first message, by a first mobile wireless device from a second mobile wireless device, via a mobile operator base station, wherein the first message is formatted according to a short message service (SMS) format. ***The Accused Instrumentalities receive a first message, via a mobile operator base station, formatted according to SMS format.*** Specifically, when an iPhone is initially sold to a user, the iMessage functionality is not yet activated on the device. Prior to such activation, the iPhone sends and receives text messages with other mobile devices via SMS. The "first message" or claim 1 corresponds to an SMS message received prior to the activation of iMessage. If you can't turn on or sign in to iMessage or FaceTime on your iPhone To use either iMessage or FaceTime, you need to activate them on your iPhone. … * * *

4	If you're using an iPhone, you need SMS messaging to activate your phone number with iMessage and FaceTime. * * * It might take up to 24 hours for your carrier to verify your phone number with Apple. See: Exhibit 18, If you can't turn on or sign in to iMessage If you aren't using iMessage, you can use SMS/MMS. These messages are texts and photos that you send to other cell phones or another iPhone, iPad, or iPod touch. SMS/MMS messages aren't encrypted and appear in green text bubbles on your device. See: Exhibit 16, What is the difference between iMessage and SMS/MMS? ***The Accused Instrumentalities are configured to receive SMS messages via a mobile operator base station.*** In particular, an iPhone receives SMS messages via cell towers operated by mobile wireless operators. **About mobile broadband/LTE** The AT&T mobile broadband/LTE[1] network provides the backbone of AT&T wireless service. • Mobile broadband/LTE is available in most cities, suburbs, and many rural areas. The connection is over the air from cell towers to the device. See: Exhibit 22, Differences between LTE mobile broadband and Wi-Fi

	3GPP TS 23.040 V8.6.0 (2009-09) *Technical Specification* **3rd Generation Partnership Project;** **Technical Specification Group Core Network and Terminals;** **Technical realization of the Short Message Service (SMS)** **(Release 8)** …

	10.1 Short message mobile terminated The entities involved in this procedure are depicted in figure 14.  NOTE 1: The SMS Router is an optional entity. If it is not present, the two interfaces extending from the right side of the SMS-GMSC extend directly to the SGSN and MSC, respectively. NOTE 2: Since the short message mobile terminated procedure covers the functionality required at SM-RL for transferring TPDUs from SC to MS, the procedure described covers both short message (SMS-DELIVER) and status report (SMS-STATUS-REPORT) transfer. The term "short message transfer" therefore, in this clause, covers both cases. **Figure 14: Interfaces involved in the Short message mobile terminated procedure. GSM TS 43.002 [5]. X is the interface between an MSC and an SC as defined in clause 5** See: Exhibit 23, 3GPP TS 23.040 V8.6.0 (2009-09), § 10.1
subscribing, by the first mobile wireless device, to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station;	The Accused Instrumentalities subscribe, by the first mobile wireless device, to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station. ***The Accused Instrumentalities subscribe to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station.*** In particular, a user subscribes to iMessage (a packet switched message service) via a mobile operator base station by activating iMessage on an iPhone. During subscription to iMessage, an iOS device generates public keys that are sent to Apple for storage in the Apple Identity Service (IDS).

	If you can't turn on or sign in to iMessage or FaceTime on your iPhone To use either iMessage or FaceTime, you need to activate them on your iPhone. … * * * If you're using an iPhone, you need SMS messaging to activate your phone number with iMessage and FaceTime. See: Exhibit 18, If you can't turn on or sign in to iMessage

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What is the difference between iMessage and SMS/MMS?

Learn why some of your message bubbles are blue or green.

You can use the Messages app on your iPhone, iPad, or iPod touch to send messages. Those messages are sent as iMessage or SMS/MMS. Learn more about the difference between the message types.

iMessage

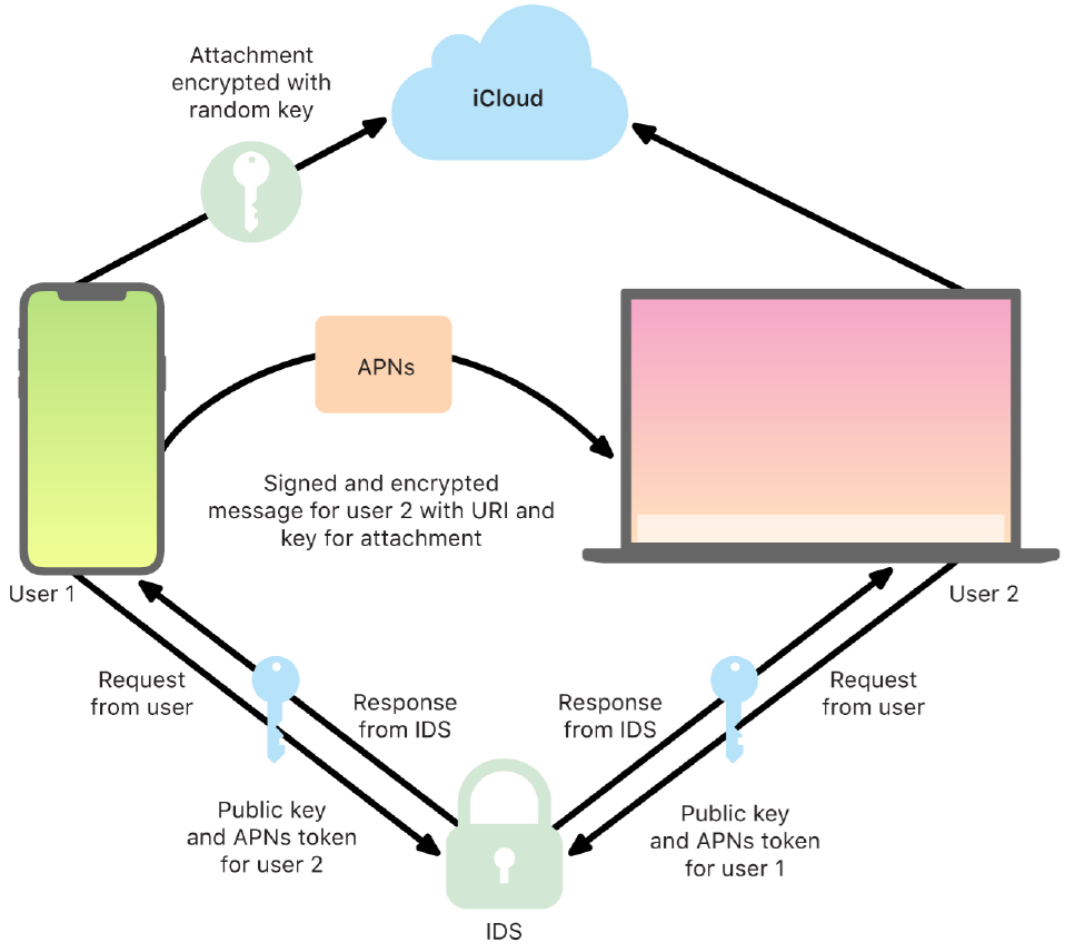
iMessages are texts, photos, or videos that you send to another iPhone, iPad, iPod touch, or Mac over Wi-Fi or cellular-data networks. These messages are always encrypted and appear in blue text bubbles. To turn iMessage on or off, go to Settings > Messages.

SMS/MMS

If you aren't using iMessage, you can use SMS/MMS. These messages are texts and photos that you send to other cell phones or another iPhone, iPad, or iPod touch. SMS/MMS messages aren't encrypted and appear in green text bubbles on your device.

See: Exhibit 16, What is the difference between iMessage and SMS/MMS?

	iMessage security overview … When a user turns on iMessage on a device, the device generates encryption and signing pairs of keys for use with the service. … The public keys are sent to Apple Identity Service (IDS), where they are associated with the user's phone number or email address, along with the device's APNs address. See: Exhibit 19, Apple Platform Security – May 2024, at 196
transmitting, by the first mobile wireless device, after the subscribing, a request including at least information corresponding to at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service;	The Accused Instrumentalities transmit, by the first mobile wireless device, after the subscribing, a request including at least information corresponding to at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service. ***The Accused Instrumentalities transmit, after the subscribing, a request including at least information corresponding to at least one mobile phone number of the second mobile wireless device.*** In particular, upon initiating a new message, the Accused Instrumentalities retrieve a phone number from a new message and sends it in a request to the IDS. **How iMessage sends and receives messages securely** Users start a new iMessage conversation by entering an address or name. If they enter a phone number or email address, the device contacts the Apple Identity Service (IDS) to retrieve the public keys and APNs addresses for all of the devices associated with the addressee. See: Exhibit 19, Apple Platform Security – May 2024, at 197. **Request for public keys at the IDS database** When composing a message, the sending device checks whether public keys are available for the receiving device in the IDS database by sending a request to the IDS database in this regard.

	See: Exhibit 17, Apple Brief, dated 6/15/22, at 6.  See: Exhibit 19, Apple Platform Security – May 2024, at 198. ***Apple iMessage determines whether the second mobile wireless device corresponds to a subscriber of the service.***

	In particular, once the sending mobile phone retrieves the destination address from a message being composed, the sending phone determines/selects the transmission mode (iMessage or SMS) by sending a request to the IDS server with the destination address. If the response includes keys, the sending mobile phone selects iMessage for transmission; if no public keys are returned, the sending mobile phone selects SMS for transmission mode. The sending mobile wireless device registered with iMessage decides to send the messages to the receiving device as SMS instead of iMessage if it does not receive public keys in response to the request to the IDS database for the receiving device. **Request for public keys at the IDS database** When composing a message, the sending device checks whether public keys are available for the receiving device in the IDS database by sending a request to the IDS database in this regard. See: Exhibit 17, Apple Brief, dated 6/15/22, at 5-6.
receiving, by the first mobile wireless device, a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service; and	The Accused Instrumentalities receive, by the first mobile wireless device, a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service. ***The Accused Instrumentalities receive a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service.*** In particular, the IDS provides a response to the request from the user. The IDS provides public keys only when a recipient device is a subscriber of iMessage. 1. Request for public keys at the IDS database When composing a message, the sending device checks whether public keys are available for the receiving device in the IDS database by sending a request to the IDS database in this regard. a) Public keys are stored in the IDS database if

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	● the receiving device is registered for iMessage and not logged out; and … The sending device only learns whether public keys are available for the receiving device or whether no public keys are available, i.e., the general readiness of the receiving device to receive. It does not receive any further information from the IDS database, in particular it does not know when the receiving device most recently sent a heartbeat to the IDS database. See: Exhibit 17, Apple Brief, dated 6/15/22, at 6

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	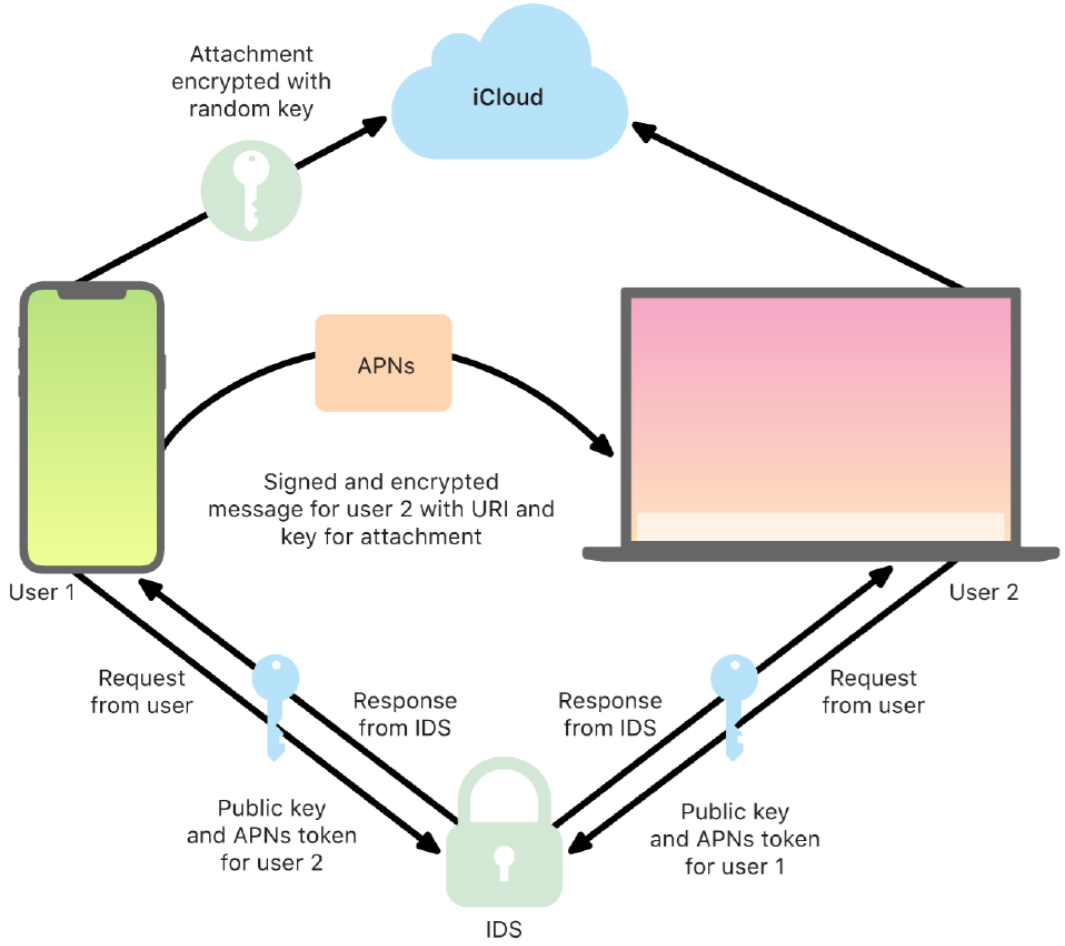 See: Exhibit 19, Apple Platform Security – May 2024, at 198.
formatting a second message in accordance with a message format of the service, subsequent to the subscribing and based	The Accused Instrumentalities format a second message in accordance with a message format of the service, subsequent to the subscribing and based at least in part on the response. ***A second message is formatted in accordance with a message format of the service, subsequent to the subscribing and based at least in part on the response.***

at least in part on the response;	In particular, when the response provides public keys associated with an iMessage recipient, a message is formatted and sent according to iMessage. If public keys are received/available for the receiving device, the sending device basically sends the message via iMessage. See: Exhibit 17, Apple Brief, dated 6/15/22, at 6

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What is the difference between iMessage and SMS/MMS?

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You can use the Messages app on your iPhone, iPad, or iPod touch to send messages. Those messages are sent as iMessage or SMS/MMS. Learn more about the difference between the message types.

iMessage

iMessages are texts, photos, or videos that you send to another iPhone, iPad, iPod touch, or Mac over Wi-Fi or cellular-data networks. These messages are always encrypted and appear in blue text bubbles. To turn iMessage on or off, go to Settings > Messages.

SMS/MMS

If you aren't using iMessage, you can use SMS/MMS. These messages are texts and photos that you send to other cell phones or another iPhone, iPad, or iPod touch. SMS/MMS messages aren't encrypted and appear in green text bubbles on your device.

See: Exhibit 16, What is the difference between iMessage and SMS/MMS?

wherein the message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;	The message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format. ***The message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format.*** In particular, messages sent over iMessage service are not SMS/EMS/MMS messages.

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See: Exhibit 16, What is the difference between iMessage and SMS/MMS?

wherein the first message is received prior to the subscribing.	In the Accused Instrumentalities, the first message is received prior to the subscribing. ***The first message is received prior to the subscribing.*** Specifically, when an iPhone is initially sold to a user, the iMessage functionality is not yet activated on the device. Prior to such activation, the iPhone sends and receives text messages via SMS. The "first message" or claim 1 corresponds to an SMS message received prior to the activation of iMessage. If you can't turn on or sign in to iMessage or FaceTime on your iPhone To use either iMessage or FaceTime, you need to activate them on your iPhone. … * * * If you're using an iPhone, you need SMS messaging to activate your phone number with iMessage and FaceTime. * * * It might take up to 24 hours for your carrier to verify your phone number with Apple. See: Exhibit 18, If you can't turn on or sign in to iMessage If you aren't using iMessage, you can use SMS/MMS. These messages are texts and photos that you send to other cell phones or another iPhone, iPad, or iPod touch. SMS/MMS messages aren't encrypted and appear in green text bubbles on your device. See: Exhibit 16, What is the difference between iMessage and SMS/MMS?
6. The method of claim 1, further comprising:	The Accused Instrumentalities display, by the first mobile wireless device, in a single interface, the second message and an MMS message.

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displaying, by the first mobile wireless device, in a single interface, the second message and an MMS message.	***The Apple iPhone displays the second message and an MMS message in a single interface.*** In particular, the iPhone displays iMessage messages and MMS message in a single interface, e.g. both message types can be displayed to a user simultaneously.  See: Exhibit 20, iPhone Screenshot taken on June 9th (iPhone 12 Pro model# MGK13LL/A iOS 16.5)

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