UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
MIDLAND/ODESSA DIVISION

HEADWATER RESEARCH LLC, *Plaintiff*, v. GOOGLE LLC, *Defendant*.	Case No. 7:25-cv-00369-DC-DTG **JURY TRIAL DEMANDED**

DEFENDANT GOOGLE LLC'S OPENING CLAIM CONSTRUCTION BRIEF

GOOGLE EXHIBIT 1023
Google v. Headwater
IPR2026-00441

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I. INTRODUCTION

The parties dispute the construction of two terms.

First, the term "subscriber [information/identity] module (SIM)" refers to industry standards, and therefore is correctly construed to reflect the "SIM" industry standards that were known in the art in the timeframe of the alleged inventions—namely, 2009-2013. In particular, "SIM" was a well-known term of art referring to standardized physical modules that could be swapped so that a particular subscriber could access different networks from one phone. Headwater's proposal seeks to include later-developed standards. That violates the tenet that "[a] claim cannot have different meanings at different times; its meaning must be interpreted as of its effective filing date," *PC Connector Sols. LLC v. SmartDisk Corp.*, 406 F.3d 1359, 1363 (Fed. Cir. 2005)—particularly for claim terms that refer to industry standards. Headwater's proposal of "plain and ordinary" meaning is an effort to sidestep the intrinsic evidence and violate tenets of claim construction.

Second, the entire preamble of claim 10 of the '155 patent should be limiting to provide antecedent basis for limitations in the bodies of the claim. Headwater agrees that most of the preamble is limiting but seeks to erase a key limitation that requires the secure execution environment be "inaccessible to a user application software." But that inaccessibility is a key structural requirement, not an intended use or purpose, and therefore must limit the claim.

II. ASSERTED PATENTS

Headwater asserts 141 claims across seven patents.[1] The Asserted Patents are all related, except for the '510 patent. The Asserted Patents relate to device-assisted network service management in which a "service processor" embedded on an end-user communication device

[1] The "Asserted Patents" are U.S. Patents Nos. 8,639,935 (Ex. 1);9,609,510 (Ex. 2); 9,973,930 (Ex. 3); 11,096,055 (Ex. 4); 11,405,429 (Ex. 5); 11,966,464 (Ex. 6); and 11,985,155 (Ex. 7).

(such as a smartphone) works in coordination with a network-based "service controller" to monitor, control, bill for, and verify the use of network services across wireless and wired access technologies. The Asserted Patents purport to address problems of growing network capacity constraints and the need for more flexible, granular service plans by moving certain functions onto the device itself, while the service controller supervises policy compliance.

III. AGREED TERMS

The parties have agreed on constructions of the following terms:

Term/Phrase/Clause	Patents/Claims	Agreed Construction
"device agent[s]"	'930 patent, claim 1; '935 patent, claims 1, 3, 4, 9, 16, 18, 20, 21, 23, 25, 27-29	a piece of software on the end-user device that performs certain functions for other software
"A non-transitory computer-readable storage medium storing one or more machine-executable instructions that, when executed by one or more processors of a network system, cause the one or more processors to:"	'935 patent, claim 1	Preamble limits the claim
"service control link"	'935 patent, claims 1, 5, 11, 21, 22, 24, 26, 27, 29	a communication link with the service controller for service control messages
"A method of operating a wireless end-user device having a secure modem, a secure execution environment and a secure memory partition, the method comprising:"	'464 patent, claim 1	Preamble limits the claim

IV. DISPUTED TERMS

a. "subscriber [information/identity] module (SIM)" ('510 patent, claims 22, 24; '935 patent, claim 10; '055 patent, claim 11; '155 patent, claims 3, 12)

Google's Construction	Headwater's Construction
Subscriber Identity Module as described in the ETSI/3GPP standards in existence at the time of the claimed invention	no construction is necessary, the term should be given its plain and ordinary meaning

The claims at issue recite, in relevant part, "a subscriber identity module (SIM)" or "subscriber information module (SIM)."

SIM is a term of art referring to industry standards. Courts routinely construe terms tied to industry standards to mean what a POSITA understood about the standard ***at the time of the alleged invention***. *PC Connector Sols. LLC*, 406 F.3d at 1363 ("A claim cannot have different meanings at different times; its meaning must be interpreted as of its effective filing date."). Google's proposal reflects that canon. Headwater's proposal contradicts it by including distinct technologies and wireless communication standards that were undisputedly developed after the alleged inventions. That violates a body of claim construction precedent.

For example, in *Fundamental Innovation Systems International LLC v. Samsung Electronics Co.*, the Eastern District of Texas court construed "USB" to mean "Universal Serial Bus as described in Universal Serial Bus Specification Revision 2.0 and related versions of this standard ***at the time of the claimed invention.***" No. 2:17-cv-145-JRG-RSP, 2018 WL 647734, at *6-12 (E.D. Tex. Jan. 31, 2018) (emphasis added). The court relied on the specification's use of the term "USB" to refer to the industry standard and specific attributes of the USB standards, and rejected a construction that would capture subsequent iterations of USB technologies. *Id.*

Likewise, in *PC Connector Solutions LLC v. SmartDisk Corp.*, the Federal Circuit construed the terms "normally connectible," "conventional," "traditionally connectable," and "standard" as "fixing the peripherals and computer I/O ports described by such terms to be those

in existence ***at the time of filing in 1988***." 406 F.3d at 1361-64 (emphasis added). The Federal Circuit explained that because nothing in the specification or prosecution history imparted a special meaning on those terms, they were "governed by their ordinary and customary meanings," which were "limited to technologies existing at the time of the invention." *Id.* at 1363.

And in *Chrimar Systems, Inc. v. Alcatel-Lucent USA, Inc.*, the Eastern District of Texas court construed "BaseT" to mean "twisted pair Ethernet in accordance with the 10BASE-T or 100BASE-T standards." No. 6:15-cv-163-JRG-JDL, 2016 WL 1228767, at *8-9 (E.D. Tex. Mar. 28, 2016). The court found that, even if the term had no special definition in the specification, the "BaseT" should not encompass the later 1000Base-T standard because "[t]he scope of the term…is ***not unlimited*** as Plaintiffs suggest, but rather must be interpreted with regard to what was known in the art at the time." *Id.* at *9 (emphasis added) (citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 1003 (Fed. Cir. 1995)); *see also Extreme Networks, Inc. v. Enterasys Networks, Inc.*, No. 07-C-229-C, 2007 WL 5601497, at *16-17 (W.D. Wis. Nov. 21, 2007) ("IEEE 802 [term]" construed as "[term] compliant with all IEEE 802 standards, as those standards existed on [the date of the invention]").

The same result follows here. A Subscriber Identity Module, or SIM, was a well-known term of art referring to physical modules, untethered to particular phones, that identified the subscriber to the network. SIMs could be ***moved*** from one phone to another, allowing a user to change phones on the same network. Ex. 8 (Scott B. Guthery & Mary J. Cronin, *Mobile Application Development with SMS and the SIM Toolkit: Building Smart Phone Applications* ("Mobile App. Book") 110 (2002) ("You could move it from handset to handset."). SIMs could also be ***replaced*** within a phone with a new SIM corresponding to a different network, allowing a phone to switch networks. SIM was defined by standards-setting bodies, including the 3rd

Generation Partnership Project (3GPP) and the European Telecommunications Standard Institute (ETSI). Ex. 9 (Declaration of Markus Jakobsson, Ph.D.) ("Jakobsson") ¶¶ 51-52; *see also id.* ¶¶ 47-50. Relevant here, at the time of the alleged inventions, a POSITA would not have understood the industry-standard term "SIM" to encompass later-developed and distinct standards.

The Subscriber Identity Module Expert Group (SIMEG) introduced the term "SIM" in 1988 as part of efforts to create a standard "Plug-In" smart card for global mobile phone compatibility. Ex. 10 (*GSM and UMTS: The Creation of Global Mobile Communication* ("GSM Book") 341-342 (Friedhelm Hillebrand ed., 2002). The SIM was first standardized for use in 2nd Generation (2G) wireless networks, specifically for GSM standardized networks. *Id.*; Ex. 8 (Mobile App. Book) at 115 ("first use in a GSM phone"); Ex. 11 (SIM Card, *Microsoft Computer Dictionary* (5th ed. 2002) (SIM card is a "smart card designed for use with GSM"); Ex. 12 (SIM, *Dictionary of Internetworking Terms and Acronyms: Cisco Systems' Official Internetworking Dictionary* (2001) (SIM is a "[c]omponent of an MS [mobile station] in a GSM network."); Ex. 13 (Mike Hendry, *Multi-application Smart Cards: Technology and Applications* ("Smart Cards Book") 131 (2007) ("All GSM telephones use a [SIM], which is a smart card in the ID-000 format . . . ."). The SIM evolved during standardization of 3rd Generation (3G) wireless networks in 1998-2000, when standardization of SIM was taken over by the 3GPP and ETSI, and split into two groups: the physical card (also called UICC) and the software (also called USIM). Ex. 10 (GSM Book) at 342; Ex. 13 (Smart Card Book) at 132 (discussing 1999 developments in SIM specification by ETSI including SIM Toolkit), 133 (discussing USIM in 3G standards). Specifications of the SIM include 3GPP TS 31.101 (Ex. 14, 3GPP and ETSI, *Universal Mobile Telecommunications System (UMTS); UICC-terminal interface; Physical and logical characteristics (3GPP TS 31.101 version 7.0.1 Release 7)* (2007)) and 31.102 (Ex. 15, 3GPP and

ETSI, *Universal Mobile Telecommunications System (UMTS); Characteristics of the Universal Subscriber Identity Module (USIM) application (3GPP TS 31.102 version 7.13.0 Release 7)* (2008)). Jakobsson ¶¶ 52-53. Between 2000-2009, within the 3G standardization process, the SIM standard included only minor modifications. Jakobsson ¶¶ 54-55. Notably, the standards bodies decided that the "USIM is a removable module like the SIM is for GSM." Ex. 10 (GSM Book) at 364.

Between 2009 and 2013, the earliest claimed priority dates of the Asserted Patents, the term SIM thus referred to the physical modules that are compatible with the specific industry standard specifications that existed. *See, e.g.*, Ex. 13 (Smart Cards Book) at 24-26 (discussing standardization of smart cards including ETSI's "set of standards that cover smart cards for use in public and cellular telephone systems, in particular GSM, 3GPP"). Just like "USB" in *Fundamental Innovation* referred to industry standard serial connectors, a POSITA would have understood the claimed SIM in the asserted claims to refer to the industry standards covering the familiar and standardized removable, modular cards prevalent in 2G- and 3G-compatible phones.

The intrinsic evidence in the '510, '935, '055 and '155 patents supports Google's proposal by assuming the reader already knows what a SIM is, namely, the standardized credential element defined by the ETSI/3GPP specifications. Like the term "BaseT" in *Chrimar* and the "standard" terms in *PC Connector*, the respective specifications here treat the SIM as a known credential and hardware element; there is no special or otherwise different definition. The '935 patent, for example, explains that the device's "other I/O devices" "include a Subscriber Identity Module (SIM) or Universal Subscriber Identity Module (USIM) device," and describes the advantage of implementing service-processor functions on a device "that includes a SIM and/or a USIM" so that users can "have the same service settings, performance and experience regardless of the device

the user is using on the network by using such a SIM and/or USIM (e.g., or implemented as a type of dongle)." Ex. 1 ('935 patent) at 36:24-42. The '935 patent's references to USIM—a term specific to the 3G version of SIM—reinforces that the inventors used SIM to refer to industry standardized technology. Ex. 10 (GSM Book) at 342; Ex. 13 (Smart Card Book) at 133 (discussing USIM in 3G standards); Ex. 15 (3GPP TS 31.102) (defining "*Characteristics of the Universal Subscriber Identity Module (USIM) application*"). The '935 patent also lists the SIM among device "credentials," referring to "device identification and/or credential information via security hardware such as a SIM." Ex. 1 ('935 patent) at 120:55-57. These passages show that the inventors did not ascribe a "special meaning" to SIM other than the standard; to the contrary, they used SIM to refer to the standardized module. *PC Connector*, 406 F.3d at 1363.

Headwater, however, seeks to expand the term to include standards that did not exist at the time of the alleged inventions—including certain "eSIM" standards developed by the Global System for Mobile Communications Association ("GSMA"). That, however, is not the plain and ordinary meaning to a POSITA at the relevant time. A POSITA would not have understood SIM to encompass later-developed standards, let alone those that use embedded technology (not smart cards) that are not physically removable and physically portable. Jakobsson ¶¶ 56-57.

b. Preamble of claim 10 of the '155 patent

Google's Construction	Headwater's Construction
Limits the claim	Limiting except for "configured to be inaccessible to a user application software"

The preamble of claim 10 of the '155 patent recites "[a] method for use by a communications device including a wide area network port configured to connect the communications device to a wide area network, and further including a secure memory, a secure execution environment configured to be inaccessible to a user application software, and a secure

data path processing agent, the method comprising[.]" The Parties agree that the preamble is limiting, except for the phrase "configured to be inaccessible to a user application software," which Headwater contends should not be limiting.

The Court should construe the entire preamble as limiting for two reasons.

First, the Federal Circuit has repeatedly held that "[w]hen limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention." *Eaton Corp. v. Rockwell Int'l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003); *Pacing Techs., LLC v. Garmin Int'l, Inc.*, 778 F.3d 1021, 1023-24 (Fed. Cir. 2015). That applies here. The first step of claim 10 requires "executing the secure data path processing agent ***in the secure execution environment***." '155 patent, cl. 10 (emphasis added). The definite article "the" confirms that the body of the claim refers back to the previously introduced "secure execution environment." The only place that term is introduced is the preamble, where it appears as a "secure execution environment ***configured to be inaccessible to a user application software***." *Id.* (emphasis added). In other words, the phrase Headwater seeks to ignore is part of the defining clause that introduces "the secure execution environment" into the claim—there is no other antecedent.

Second, the disputed phrase is essential to "give life, meaning, and vitality" to the claim. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). This inaccessibility is not merely a purpose or intended use of the claimed method, but a structural limitation on the "secure execution environment" which itself is undisputedly limiting on the claim. *Id.* The body of the claim is not a "structurally complete invention" because it refers to, among other things, "executing ***the*** secure data path processing agent in ***the*** secure execution environment." *Catalina*, 289 F.3d at 808-809. Based on the body alone, it is not clear *which* agent is executing

in *which* secure execution environment. The preamble provides the answer: the agent and secure execution environment are part of a "communications device," and the secure execution environment is "configured to be inaccessible to a user application software" on that device. '155 patent, cl. 10. Those structural requirements limit the claim.

The specification confirms that inaccessibility to a user application software is a limiting feature and not an intended use. Jakobsson ¶¶ 60-61. For example, the patent states that "the SEE [Secure Execution Environment] is a secure memory execution partition that cannot be accessed by any external program, bus, or device port." '155 patent at 22:56-58. It also describes "a secure execution environment that cannot be accessed by user application software." *Id.* at 56:42-43. Figure 16, annotated below, depicts "Application Programs 130" residing in a "Non-secure" zone partitioned from the "SEE" containing the secure data path processing agents. *Id.*, Fig. 16.

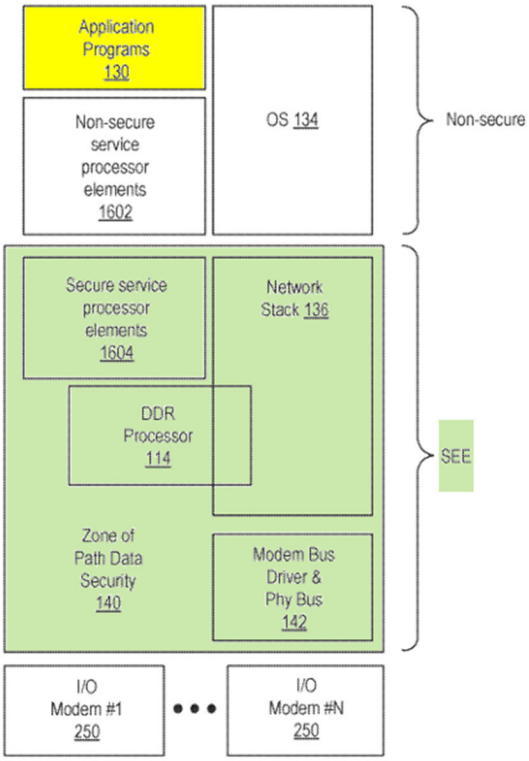

Fig. 16

Headwater's construction, which omits inaccessibility to user application software from the meaning of "secure execution environment" conflicts with the principles of claim construction and the intrinsic record. Where, as here, "it is clear the claim drafters intended to limit the claim[]" based on "the antecedent relationship," the Court should be "disinclined to sanction finding a preamble 'partially' limiting by splicing it." *Bio-Rad Labs., Inc. v. 10X Genomics Inc.*, 967 F.3d 1353, 1371 (Fed. Cir. 2020). Indeed, Headwater's concession that the claim is limited by similar language elsewhere in the claim 10 preamble (e.g., "configured to connect the communications device to a wide area network") confirms Headwater is attempting to rewrite the claim rather than apply canons of claim construction. The Court should hold that the preamble of claim 10 is limiting in its entirety.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on May 13, 2026, I caused the foregoing to be electronically filed with the Clerk of Court using the CM/ECF system, which will then send a notification of such filing (NEF) to all counsel of record.

/s/ Nathaniel St. Clair, II
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