IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

Hammond Development International, Inc.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	**Civil Action No. 6:19-CV-00355-ADA**
	§	
Amazon.com, Inc., Amazon.com LLC, Amazon.com Services, Inc., and Amazon Web Services, Inc.,	§	**Jury Trial Demanded**
	§	
Defendants.	§	

PLAINTIFF HAMMOND DEVELOPMENT INTERNATIONAL, INC.'S DISCLOSURE OF ASSERTED CLAIMS AND INFRINGEMENT CONTENTIONS AND IDENTIFICATION OF DOCUMENT PRODUCTION

Pursuant to this Court's Order Governing Proceedings (Dkt. No. 32), Plaintiff Hammond Development International, Inc. ("Plaintiff" or "HDI") makes its Disclosures of Asserted Claims and Infringement Contentions against Defendants Amazon.com, Inc.; Amazon.com LLC; Amazon.com Services, Inc.; and Amazon Web Services, Inc. (collectively "Defendants" or "Amazon") and Identification of Document Production Accompanying Disclosure.

Based on HDI's review of publicly available information, HDI presents these Preliminary Infringement Contentions reflecting its current analysis of facts presently known to it. To the best of HDI's knowledge, information, and belief, formed after an inquiry that is reasonable under the circumstances, the information contained in this disclosure is complete and correct.

Additionally, HDI incorporates by reference the allegations made in its Original Complaint in this case, including all identification of asserted claims, accused instrumentalities, and factual allegations related thereto.

HDI contends that Amazon.com, Inc.; Amazon.com LLC; Amazon.com Services, Inc.; and Amazon Web Services, Inc. (collectively, "Amazon") are jointly and severally liable for infringement of the Patents-in-Suit. Under the theories of alter ego, single business enterprise liability, and agency, the conduct of each can be attributed to and considered the conduct of the other for purposes of infringement of the Patents-in-Suit. Additionally, Amazon.com, Inc.; Amazon.com LLC; Amazon.com Services, Inc.; and Amazon Web Services, Inc. have in the past and continue[1] to hold themselves out as a single entity—"Amazon"—acting in concert, with knowledge of each other's actions, and control over each other.

I. Disclosure of Asserted Claims and Infringement Contentions

A. Identification of Asserted Claims

Based on the information currently available to it, HDI asserts Claims 10, 12, 14, 15, 16, 17, 18, 22, 24, 25, and 28 of U.S. Patent No. 9,264,483 ("the '483 Patent") as being infringed by Amazon under 35 U.S.C. § 271(a) and (b).

Based on the information currently available to it, HDI asserts Claims 11, 16, 17, and 23 of U.S. Patent No. 9,420,011 ("the '011 Patent") as being infringed by Amazon under 35 U.S.C. § 271(a) and (b).

Based on the information currently available to it, HDI asserts Claims 1, 3, 4, 5, 11, 12, and 13 of U.S. Patent No. 9,456,040 ("the '040 Patent") as being infringed by Amazon under 35 U.S.C. § 271(a) and (b).

[1] HDI understands that Amazon.com LLC ceased operations by January 1, 2018, when it was merged into Amazon.com Services, Inc. The statement therefore refers to the continuing Amazon entities to the extent that it refers to continuing activity.

Based on the information currently available to it, HDI asserts Claims 1, 3, 8, 10, 11, 14, 17, and 24 of U.S. Patent No. 9,705,937 ("the '937 Patent") as being infringed by Amazon under 35 U.S.C. § 271(a) and (b).

Based on the information currently available to it, HDI asserts Claims 1, 4, and 5 of U.S. Patent No. 9,716,732 ("the '732 Patent") as being infringed by Amazon under 35 U.S.C. § 271(a) and (b).

Based on the information currently available to it, HDI asserts Claims 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 21, and 23 of U.S. Patent No. 10,193,935 ("the '935 Patent") as being infringed by Amazon under 35 U.S.C. § 271(a) and (b).

Based on the information currently available to it, HDI asserts Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, and 23 of U.S. Patent No. 10,264,032 ("the '032 Patent") as being infringed by Amazon under 35 U.S.C. § 271(a) and (b).

Based on the information currently available to it, HDI asserts Claims 1, 6, 7, 8, 9, 10, 11, 12, 14, 15, 18, 19, 20, 24, 25, 27, 28, and 29 of U.S. Patent No. 10,270,816 ("the '816 Patent") as being infringed by Amazon under 35 U.S.C. § 271(a) and (b).

B. Identification of Accused Instrumentalities

Based on the information currently available to it, HDI accuses each following apparatus, product, device, or other instrumentality (**"Accused Instrumentality"**) of Amazon as infringing the asserted claims of the Patents-in-Suit:

Upon information and belief, Amazon makes, uses, sells, offers to sell, and/or imports into the United States systems for enabling a communication device to remotely execute an application as claimed in each of the Patents-in-Suit. For example, Amazon Alexa operates on a communication system including a plurality of components, including but not limited to application servers, to allow Alexa-enabled communication devices to remotely execute one or

more applications (including applications developed by Amazon and/or by third-party developers through the Alexa Skills capabilities) associated with Amazon Alexa (hereinafter, the "**Alexa Platform**").

Upon information and belief, Amazon makes, uses, sells, offers to sell, and/or imports into the United States communication devices as claimed in each of the Patents-in-Suit, including without limitation Amazon Echo, Echo Dot, Echo Plus, Echo Show, Echo Spot, and other Amazon Alexa-enabled devices (hereinafter, the **"Alexa Devices"**).

Amazon has infringed and continues to infringe (literally and/or under the doctrine of equivalents), directly, indirectly, and/or through subsidiaries, agents, representatives, or intermediaries, one or more claims of each of the Patents-in-Suit by making, using, importing, testing, supplying, causing to be supplied, selling, and/or offering for sale in the United States the Alexa Devices and by making, using, testing, operating, selling, and/or offering for sale a communications system that supports Alexa Devices (*e.g.*, the Alexa Platform).

Amazon's customers have infringed and continue to infringe the Patents-in-Suit by using the Alexa Devices purchased from Amazon. Through its product manuals and/or sales and marketing activities, Amazon solicits, instructs, encourages, and aids and abets its customers to purchase and use the Alexa Devices in an infringing way.

Amazon has knowledge of the Patents-in-Suit at least as of the filing of this lawsuit.

Amazon's ongoing actions are with specific intent to cause infringement of one or more claims of each of the Patents-in-Suit.

Further discovery may reveal earlier knowledge of one or more of the Patents-in-Suit, which would provide additional evidence of Amazon's specific intent and/or willful blindness with respect to infringement.

Further, HDI accuses and seeks discovery as to the identity of any Amazon products with substantially similar designs to the expressly listed Accused Instrumentalities. Moreover, it may be that the same underlying products have multiple identification numbers based on, *inter alia*, differences in geographic sales locations, customers, product colors, or other features that do not affect the structure and infringement allegations of such products. HDI also seeks discovery regarding this information and asserts that these products infringe the Asserted Claims for the same reasons as identified in these contentions.

C. Claim Charts

Attached hereto are the following charts, which are incorporated by reference as if fully set forth herein:

Appendix A – Exemplary Chart for the ’483 Patent

Appendix B – Exemplary Chart for the ’011 Patent

Appendix C – Exemplary Chart for the ’040 Patent

Appendix D – Exemplary Chart for the ’937 Patent

Appendix E – Exemplary Chart for the ’732 Patent

Appendix F – Exemplary Chart for the ’935 Patent

Appendix G – Exemplary Chart for the ’032 Patent

Appendix H – Exemplary Chart for the ’816 Patent

Additionally, the above-referenced claim charts include citations to Exhibits 1–22, which are incorporated by reference. Copies of the cited documents are being produced under Bates Numbers HDI.A002798 - HDI.A003037.

D. Literal Infringement / Doctrine of Equivalents

HDI presently contends that the Amazon Accused Instrumentalities literally infringe the asserted claims of the Patents-in-Suit. Nevertheless, with respect to any claim limitation that may

be found not to be literally infringed, HDI contends in the alternative that the Accused Instrumentalities infringe such claim limitations under the doctrine of equivalents and that any element not found to be literally met is equivalently met because any difference between the claim limitation and the Accused Instrumentality is not a substantial difference. Accordingly, HDI contends that any asserted claim that the Accused Instrumentalities are not found to infringe literally is nevertheless embodied by the Accused Instrumentalities under the doctrine of equivalents under an operate doctrine of equivalents test (*e.g.*, function-way-result or insubstantial differences).

E. Priority Dates of Asserted Claims

The ’483 Patent was filed on July 18, 2007. The other Patents-in-Suit descend from the ’483 Patent—each as a continuation—and claim priority to the ’483 Patent. Each of the Asserted Claims of the Patents-in-Suit is entitled to a priority date of no later than July 18, 2007.

Additionally, the claimed inventions were conceived at least as early as May 20, 2006. The inventor, Daniel Hammond, worked diligently from the date of conception through the filing date of the ’483 Patent. Evidence of Mr. Hammond’s early conception is produced with these disclosures at Bates Numbers HDI.A002791-HDI.A002797. HDI asserts that each of the asserted claims identified *supra*, Section I.A are entitled to an invention date of no later than May 20, 2006.

HDI reserves the right to amend the priority dates of the Asserted Claims.

II. Document Production Accompanying Disclosure

A. Documents Evidencing Conception and Reduction to Practice

HDI identifies documents produced under Bates Numbers HDI.A002791-HDI.A002797. HDI is continuing to search for relevant, non-privileged documents responsive to this category and will supplement its production pursuant to Federal Rule of Civil Procedure 26(e) if necessary.

B. File Histories of the Patents-in-Suit

Copies of the Patents-in-Suit and their file histories are produced under the following Bates Numbers:

Bates Range	Document
HDI.A000001 - HDI.A000013	U.S. Patent No. 9,264,483
HDI.A000107 - HDI.A000386	File History for U.S. Patent No. 9,264,483
HDI.A000014 - HDI.A000026	U.S. Patent No. 9,420,011
HDI.A000387 - HDI.A000694	File History for U.S. Patent No. 9,420,011
HDI.A000027 - HDI.A000039	U.S. Patent No. 9,456,040
HDI.A000695 - HDI.A001040	File History for U.S. Patent No. 9,456,040
HDI.A000040 - HDI.A000052	U.S. Patent No. 9,705,937
HDI.A001387 - HDI.A001626	File History for U.S. Patent No. 9,705,937
HDI.A000053 - HDI.A000065	U.S. Patent No. 9,716,732
HDI.A001627 - HDI.A001872	File History for U.S. Patent No. 9,716,732
HDI.A000066 - HDI.A000079	U.S. Patent No. 10,193,935
HDI.A001873 - HDI.A002228	File History for U.S. Patent No. 10,193,935
HDI.A000080 - HDI.A000093	U.S. Patent No. 10,264,032
HDI.A002229 - HDI.A002505	File History for U.S. Patent No. 10,264,032
HDI.A000094 - HDI.A000106	U.S. Patent No. 10,270,816
HDI.A002506 - HDI.A002790	File History for U.S. Patent No. 10,270,816

Dated: September 30, 2019

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has been delivered to all counsel of record on this the 30th day of September, 2019.

Eric M. Albritton

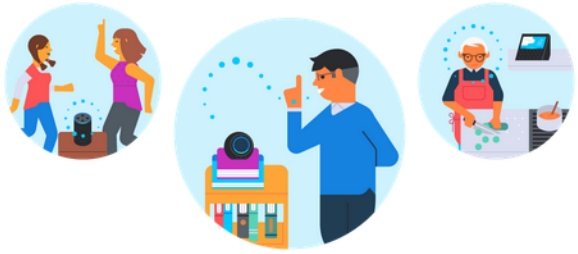
Appendix A
Claim Chart for
U.S. Patent No. 9,264,483
Amazon

Claim 10	Application of U.S. Patent No. 9,264,483 to Amazon
10. A communication system capable of enabling one or more communication devices to remotely execute one or more applications, comprising:	Amazon makes, uses, sells, and/or offers to sell a communication system capable of enabling one or more communication devices to remotely execute one or more applications. For example, Amazon Alexa operates on a communication system including Alexa Voice Service (AVS), Alexa Skills Kit (ASK), Amazon Web Services (AWS) Lambda, Amazon Simple Storage Service (S3), and other supporting AWS elements, to allow Alexa-enabled communication devices, for example, Amazon Echo, to remotely execute one or more Amazon Alexa applications.

Why Alexa?

Alexa is Amazon's cloud-based voice service available on over 100 million of devices from Amazon and third-party device manufacturers. With Alexa, you can build natural voice experiences that offer customers a more intuitive way to interact with the technology they use every day. Our collection of tools, APIs, reference solutions, and documentation makes it easy for anyone to build with Alexa.

Start building for voice today by adding new capabilities to Alexa, connecting Alexa to devices, or integrating Alexa directly into your products.



Source: https://developer.amazon.com/alexa

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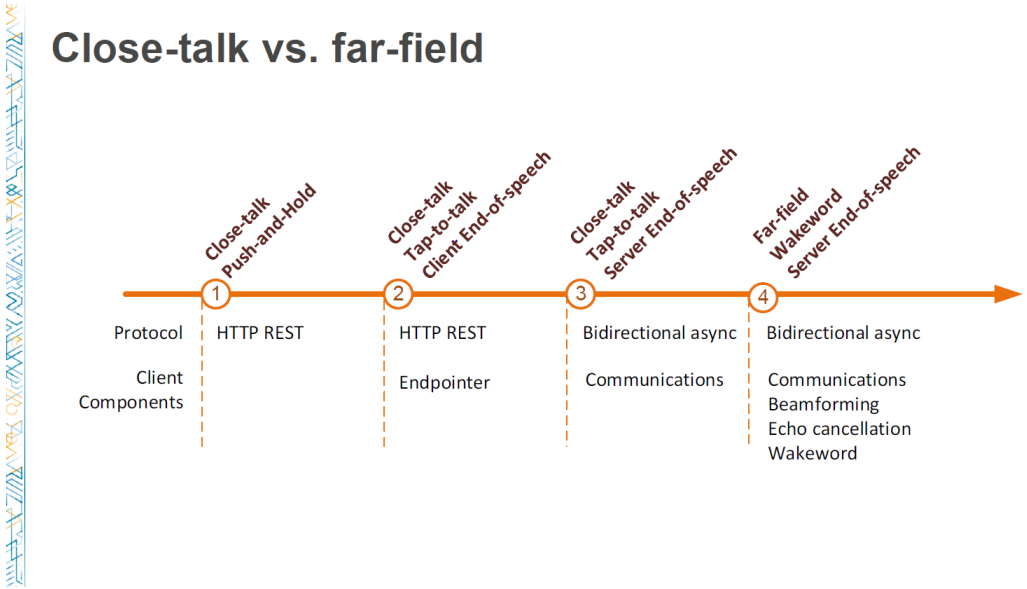
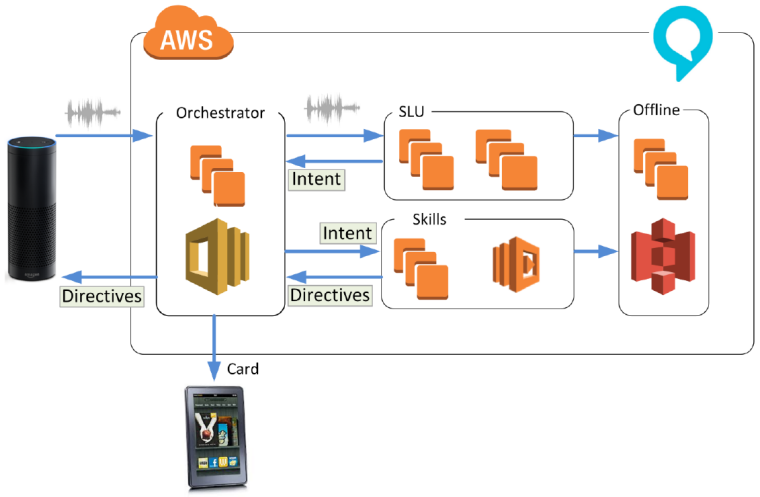
Claim 10 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
one or more application servers coupled to a first communication link, the first communication link comprising a data connection, at least one of the one or more application servers adapted to execute an application to establish a communication session with at least one communication device coupled to the data connection in response to a request from the at least one communication device to establish the communication session, **the at least one application server residing at a location remote from the at least one communication device**;	Amazon Alexa operates on a communication system comprising one or more application servers (*e.g.*, the AVS servers for automatic speech recognition (ASR), natural language understanding (NLU), and/or text-to-speech synthesis, and/or the AWS Lambda servers for Alexa Skills) coupled to a first communication link (*e.g.*, the internet), the first communication link comprising a data connection, at least one application server residing at a location remote from the at least one communication device (*e.g.*, remote from an Amazon Echo device) as evidenced below and on the following page. **Alexa platform**  Source: Donn Morrill, et al., "Alexa Voice Service: Under the Hood," October 2015, at p. 14, *available at* https://www.slideshare.net/AmazonWebServices/mbl310-alexa-voice-service-under-the-hood (hereinafter "Exhibit 1").

Claim 10 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
one or more application servers coupled to a first communication link, the first communication link comprising a data connection, **at least one of the one or more application servers adapted to execute an application to establish a communication session with at least one communication device coupled to the data connection in response to a request from the at least one communication device to establish the communication session**, the at least one application server residing at a location remote from the at least one communication device;	At least one of the one or more application servers associated with Amazon Alexa is adapted to execute an application to establish a communication session with at least one communication device coupled to the data connection (*e.g.*, an Amazon Echo) in response to a request from the at least one communication device to establish the communication session (*e.g.*, in response to a request sent by an Amazon Echo after recognizing a wake word or a tap-to-talk event). As a non-limiting example, Amazon Alexa executes the server-side end-of-speech application to establish a communication session in response to receiving a wake-word or tap-to-talk event (*e.g.*, a request or http request) from an Alexa-enabled device, as evidenced below and on the following page. Amazon AVS also implements cloud-based wake-word verification. This feature verifies the wake-word in the cloud-based AVS server after receiving the initial wake-word event on the Alexa-enabled devices.  Source: Exhibit 1, at p. 20. *See also*, video entitled "AWS re:Invent 2015 | (MBL310) Alexa Voice Service Under the Hood," at 25:00-27:20, *available at* https://www.youtube.com/watch?v=qEYbjCXOU7Q (hereinafter "Exhibit 2").

Claim 10 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
one or more application servers coupled to a first communication link, the first communication link comprising a data connection, **at least one of the one or more application servers adapted to execute an application to establish a communication session with at least one communication device coupled to the data connection in response to a request from the at least one communication device to establish the communication session**, the at least one application server residing at a location remote from the at least one communication device;	The information below further illustrates the server configuration of the Amazon system and evidences the request or http request that is utilized by an Alexa server-side application to establish a communication session with the at least one communication device (*e.g.*, an Amazon Echo). **Basic AVS request** 1) Create an HTTP request 2) Collect the audio and send the request • *Use "Transfer-Encoding: Chunked" for streaming the request or set "Content-Length" for sending prerecorded audio* • *Avoid storing the audio* 3) Parse the response 4) Handle each directive  Source: Exhibit 1, at pp. 8, 23.

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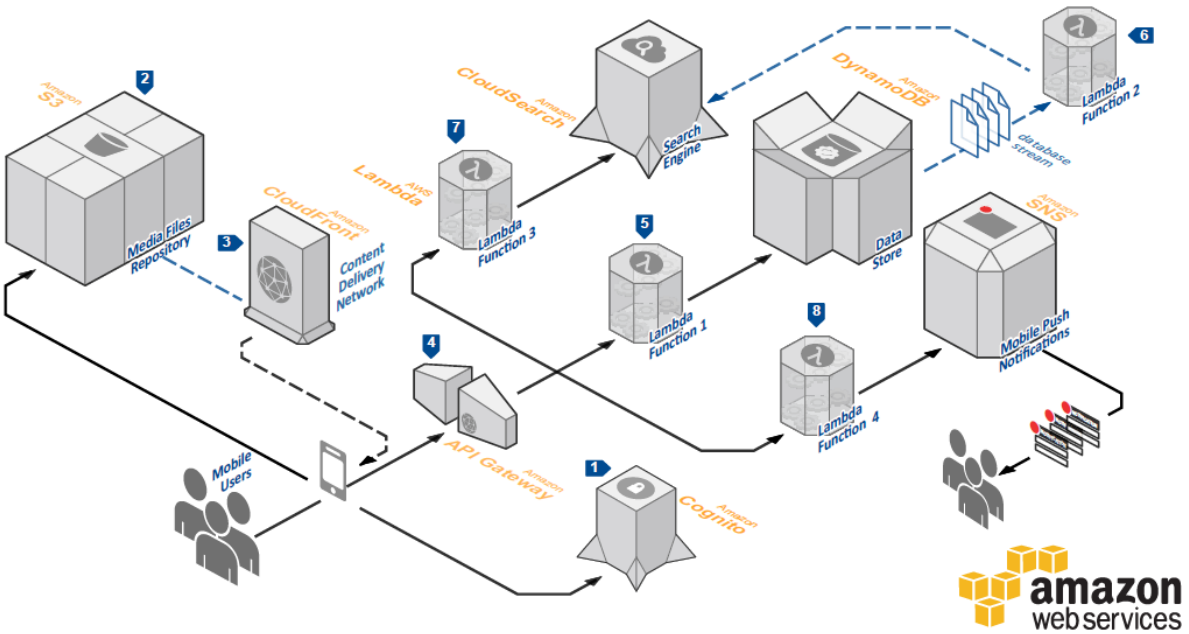
Claim 10 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
wherein the at least one application server is operable to receive over a second communication link an application from a repository having access to one or more applications maintained in a database coupled to the at least one repository,	The Amazon system further includes where the at least one application server is operable to receive over a second communication link an application from a repository having access to one or more applications maintained in a database coupled to the at least one repository, as evidenced below. As a non-limiting example, at least one Amazon Alexa application server (*e.g.*, an AWS Lambda server) hosts and runs Amazon Alexa applications (*e.g.*, Alexa Skills). The AWS Lambda servers receive a deployment package and code of such applications from Amazon S3 (*e.g.*, a repository) over a second communication link (*e.g.*, a link between the AWS lambda server and S3). **AWS LAMBDA: MOBILE BACKEND**  Source: "AWS Lambda Mobile Backend," *available at* https://www.slideshare.net/saifam/lambda-refarchmobilebackend (hereinafter "Exhibit 3").

Claim 10 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
wherein the at least one application server is further operable to execute the received application remote from the at least one communication device and to establish the communication session with the at least one communication device,	The Amazon system further includes where the at least one application server is further operable to execute the received application remote from the at least one communication device (*e.g.*, remote from an Amazon Echo device) and to establish the communication session with the at least one communication device (*e.g.*, as evidenced *supra*, pp. 4-5). As a non-limiting example, AWS Lambda servers are operable to execute the applications they receive from Amazon S3 remotely from the Alexa-enabled devices such as the Amazon Echo. Host a Custom Skill as an AWS Lambda Function The easiest way to build the cloud-based service for a custom Alexa skill is by using AWS Lambda, an Amazon Web Services offering that runs your code only when it's needed and scales automatically, so there is no need to provision or continuously run servers. You upload the code for your Alexa skill to a Lambda function and Lambda does the rest, executing it in response to Alexa voice interactions and automatically managing the compute resources for you. Source: https://developer.amazon.com/docs/custom-skills/host-a-custom-skill-as-an-aws-lambda-function.html#create-a-lambda-function-for-an-alexa-skill, (hereinafter "Exhibit 4").

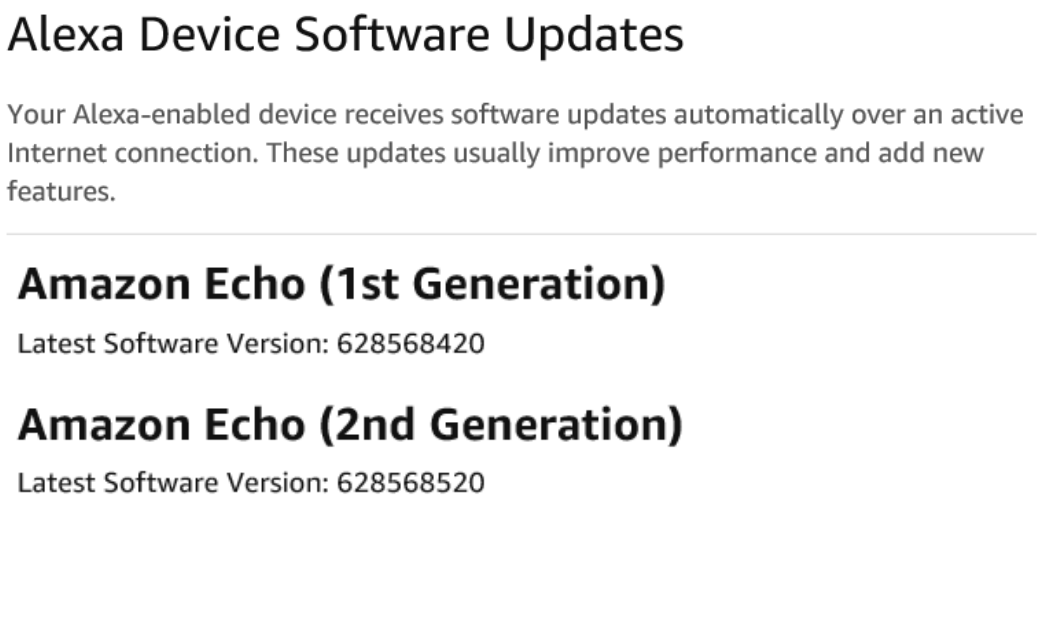
Claim 10 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon

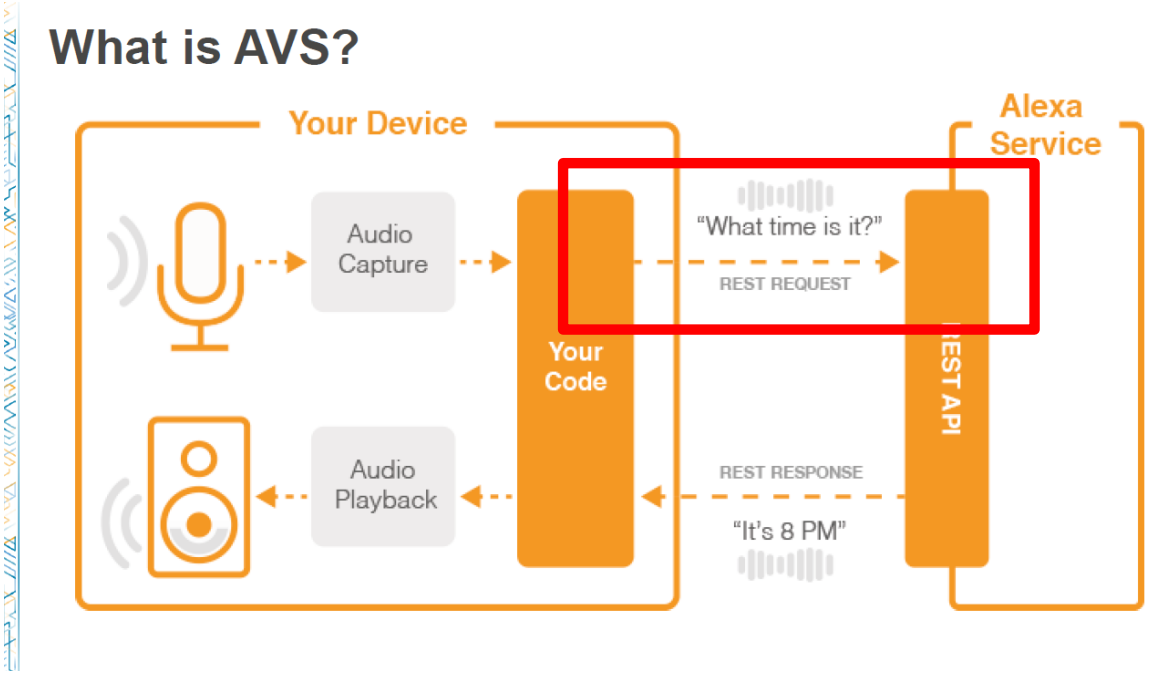
wherein the at least one application server is operable to communicate a request for processing service to the at least one communication device, and wherein the request for processing service is communicated to the at least one communication device over the data connection, and	The Amazon system further includes where the at least one application server is operable to communicate a request for processing service to the at least one communication device (*e.g.*, an Amazon server is operable to send a request to an Amazon Echo, resulting in the Echo performing a processing function related to the request), and wherein the request for processing service is communicated to the at least one communication device over the data connection (*e.g.*, via an internet or http connection). As a non-limiting example, the Amazon Alexa application servers such as the AVS servers and/or the AWS Lambda servers implement multi-turn dialogs in AVS and Alexa Skills to solicit information from, and confirm information and user request intent from the Alexa-enabled device, such as the Amazon Echo, and its users. As shown below, an Amazon server may send a request for processing service (*e.g.*, a "SPEAK" directive w/ encoded audio data) to a communication device (*e.g.*, an Amazon Echo that plays the audio data to a user).
	 
	Basic AVS request: Parse the response
	`HTTP/1.1 200 OK`
	`Content-Type: multipart/related; boundary={BOUNDARY TERM}`
	`--{BOUNDARY TERM}`
	`Content-Type: application/json; charset=UTF-8`
	`{ "messageHeader": {},`
	`"messageBody": {`
	`"directives": [ {`
	`"namespace": "{AudioPlayer | SpeechSynthesizer}",`
	`"name": "{DIRECTIVE}",`
	`"payload" : {`
	`--{BOUNDARY TERM}`
	`Content-Disposition: form-data; name="audio"`
	`Content-Type: audio/mpeg`
	`Content-ID: {CONTENT ID}`
	`{ENCODED AUDIO DATA}` ← If *directive* is *speak*, play this back to the user
	Source: Exhibit 1, pg. 11. *See also*, Exhibit 2 at 16:30-18:30.

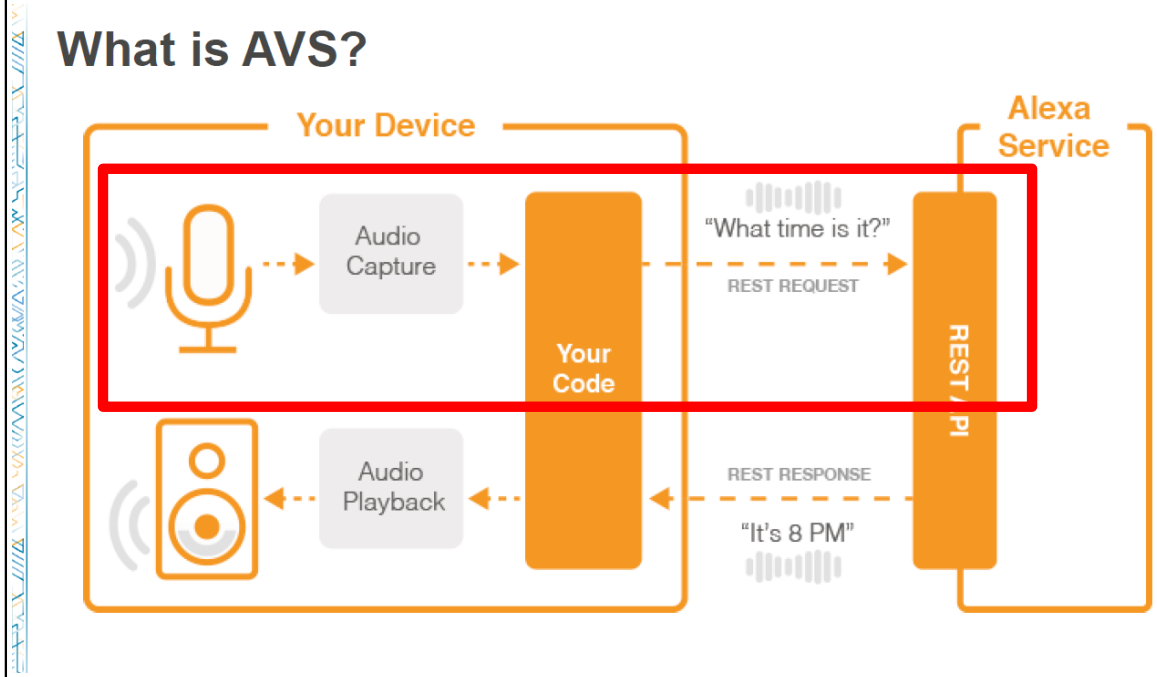
Claim 10 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
wherein the request for processing service comprises one or more queries for information from a user.	The Amazon system further includes where the request for processing service comprises one or more queries for information from a user. As a non-limiting example, as established *supra*, Amazon Alexa application servers (such as the AVS servers and/or AWS Lambda servers) may communicate a request for processing service in the form of an audio question to solicit information from a user and/or confirm information / intent with the user. One example includes where a user instructs Amazon Alexa to set a timer by speaking the phrase "Alexa, set a timer" to the Amazon Echo device. Amazon Alexa responds with the question, "for how long?" to solicit timer duration information from the user. This question is communicated to and played back by the Amazon Echo device. *See e.g.*, Exhibit 2 at 5:00-6:00. Another example includes where an Amazon Alexa server performs a "multi-turn dialog" with an Amazon Echo. Amazon describes a "multi-turn dialog" as "*a conversation with multiple turns* in which Alexa asks questions and the user responds with the answers." *See* https://developer.amazon.com/docs/custom-skills/dialog-interface-reference.html#steps-of-a-multi-turn-dialog-or-conversation (hereinafter "Exhibit 5"). The conversation is tied to a specific intent representing the user's overall request. The questions and answers are intended to gather, validate, and confirm slot values (*e.g.*, values for reference spaces within a sequence, *see* https://developer.amazon.com/docs/custom-skills/slot-type-reference.html). The conversation continues until all slots needed for the intent are filled and confirmed according to the rules defined in Amazon's dialog model. Responses sent by Amazon servers eliciting information from a user are requests for processing service comprising one or more queries for information from a user, as evidenced above and on the following page.

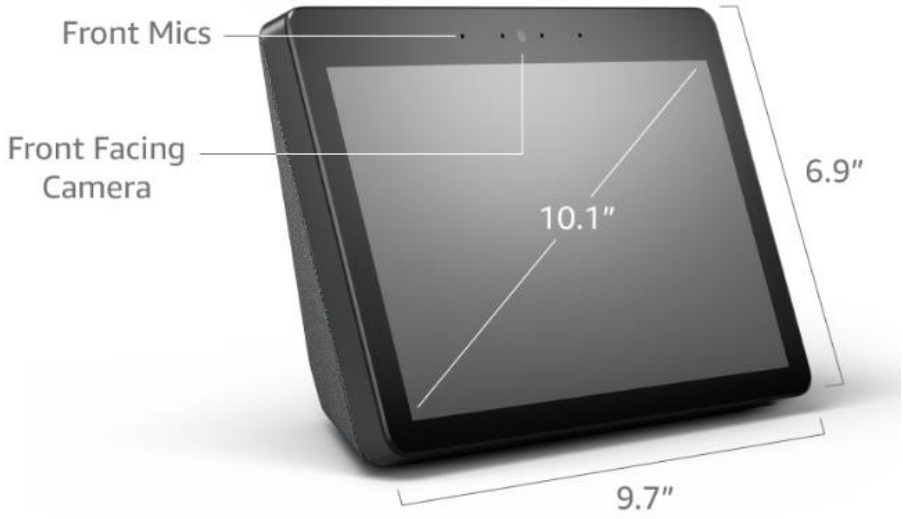
Claim 10 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon

wherein the request for processing service comprises one or more queries for information from a user.	The queries for information from a user that an Amazon Alexa server provides fall into four categories in a multi-turn dialog: (1) slot elicitation, (2) slot confirmation, (3) intent confirmation, and (4) slot validation. Each of these categories include requests for processing service comprising one or more queries for information from a user, as evidenced below.
	
	• *Slot elicitation*: Ask the user for a slot value. The user answers with a slot value or a full utterance including the slot value. Examples of slot elicitation questions:
	  • **Alexa:** What city are you leaving from? *(Eliciting the value for a* `fromCity` *slot.)*
	  • **Alexa:** Where are you traveling to? *(Eliciting the value for a* `toCity` *slot.)*
	  • **Alexa:** When did you want to travel? *(Eliciting the value for a* `travelDate` *slot.)*
	
	• *Slot confirmation*: Ask the user to confirm that a *single slot value* previously provided (or set programmatically) is correct. The user answers with "yes" or "no". Examples of slot confirmation questions:
	  • **Alexa:** You said you're leaving from *Seattle*, right? *(Confirming the* `fromCity` *value.)*
	  • **Alexa:** Did you want to travel to *Portland*? *(Confirming the* `toCity` *value.)*
	  • **Alexa:** You're traveling on *April 21st*, right? *(Confirming the* `travelDate` *value.)*
	
	• *Intent confirmation*: Ask the user to verify that *all* the information gathered for the intent is correct before fulfilling the intent. As with slot confirmation, the user answers with "yes" or "no". Examples of intent confirmation questions:
	  • **Alexa:** I'm saving your trip from *Seattle* to *Portland* on *April 21st*. Is that OK? *(Confirming the entire* `PlanMyTrip` *intent.)*
	
	• *Slot validation*: Check the slot value against pre-defined rules and prompt the user if it fails. The user can then respond with a corrected value. Example:
	  • **Alexa:** I can't plan a trip for a date that has passed, so please tell me a date in the future *(Prompt after user provided a date before today for the* `travelDate` *slot.)*
	
	Source: Exhibit 5, at pp. 2-3.

Claim 12	Application of U.S. Patent No. 9,264,483 to Amazon
12. The system of claim 10, wherein the at least one communication device comprises a thin-client software program that provides processing services to an application substantially executed at a location remote from the at least one communication device.	Amazon Alexa operates on a communication system where the at least one communication device comprises a thin-client software program (*e.g.*, Amazon Echo software, as evidenced below) that provides processing services (*e.g.*, services to process requests such as requests to play audio data or present queries to a user) to an application substantially executed at a location remote from the at least one communication device (*e.g.*, an Alexa Skill and/or an Amazon AVS application substantially executed on the Amazon/AVS/AWS/Lambda servers).  Source: https://www.amazon.com/gp/help/customer/display.html?nodeId=201602210 (hereinafter "Exhibit 6").

Claim 14	Application of U.S. Patent No. 9,264,483 to Amazon
14. The system of claim 10, wherein the at least one communication device communicates a response to the one or more queries for information back to the at least one application server over the data connection.	Amazon Alexa operates on a communication system where at least one communication device communicates a response to the one or more queries for information back to the at least one application server. For example, a demonstration of Alexa capabilities in setting a timer illustrates where the communication device (*e.g.*, an Amazon Echo) communicates a response to the one or more queries for information (*e.g.*, a response to Alexa's question "for how long") back to the at least one application server. *See e.g.*, Exhibit 2 at 5:25-6:00. Another example includes where an Amazon Alexa server performs a "multi-turn dialog" with an Amazon Echo. *See* Exhibit 5. The response from the communication device is over the same data connection as the initial communication (indicated below).  Source: Exhibit 1, pg. 6.

Claim 15	Application of U.S. Patent No. 9,264,483 to Amazon
15. The system of claim 14, wherein the response to the one or more queries is selected from the group consisting of a voice input, a DTMF input, a stylus input, and a keyboard input.	The response to the one or more queries is selected from the group consisting of a voice input, a DTMF input, a stylus input, and a keyboard input. As a non-limiting example, the response demonstrated in Exhibit 2 at 5:25-6:00 is a voice input. Furthermore, as shown below, one of the basic functionalities of the Amazon Alexa service is processing voice inputs. *See also*, Alexa and Alexa Devices FAQs, *available at* https://www.amazon.com/gp/help/customer/display.html?nodeId=201602230 (hereinafter "Exhibit 7"). Additional examples of a voice input are illustrated in Exhibit 5.  Source: Exhibit 1, pg. 6.

Claim 16	Application of U.S. Patent No. 9,264,483 to Amazon
16. The system of claim 14, wherein the response to the one or more queries is provided through a touch input.	For certain Alexa-enabled devices, the response to the one or more queries may be provided through a touch input. As one example, the Amazon Echo Show includes a touchscreen that allows for a user to provide a response to one or more queries utilizing a touch input.  **Echo Show** Size: 9.7″ x 6.9″ x 4.2″ (246 mm x 174 mm x 107 mm) Weight: 62.2 oz. (1765 grams) *Actual size and weight may vary by manufacturing process* Display: 10.1″ touchscreen Camera: 5MP Source: https://www.amazon.com/All-new-Echo-Show-2nd-Gen/dp/B077SXWSRP (hereinafter "Exhibit 8").

Claim 17	Application of U.S. Patent No. 9,264,483 to Amazon
17. The system of claim 10, wherein the request for processing service comprises one or more instructions to present information to the user.	The request for processing service comprises one or more instructions to present information to the user. Amazon Alexa servers routinely provide instructions to a communication device (*e.g.*, an Amazon Echo) to present information to a user. As a non-limiting example, certain AVS response directives comprise one or more instructions to present information to a user. As shown below, at least the AVS response directives "PLAY" and "SPEAK" result in the presentation of information to a user. **AVS response directives** **Directive** / **Meaning** clearQueue — Clear the playback queue listen — Multi-turn interaction - listen for more audio play — Play a streaming URL speak — Speak the Alexa response to the user stop — Stop streaming playback Source: Exhibit 1, at p. 12.

Claim 18	Application of U.S. Patent No. 9,264,483 to Amazon
18. The system of claim 17, wherein the one or more instructions to present information to the user is selected from the group consisting of an audio output, a voice output, a text output, a video output, and an image output.	The one or more instructions to present information to the user is selected from the group consisting of an audio output, a voice output, a text output, a video output, and an image output. For instance, in the examples given on the previous page, the "PLAY" directive may be an audio output and / or a voice output. In addition or in the alternative to the foregoing, the "SPEAK" directive may be an audio output and / or a voice output. In certain Alexa-enabled devices, the one or more instructions to present information to the user may be a text output, a video output, and/or an image output. As one example, the Amazon Echo Show includes a touchscreen that allows for the presentation of a text output, a video output, and/or an image output, as evidenced below and *supra*, p. 14.  Source: Exhibit 8, at p. 3.

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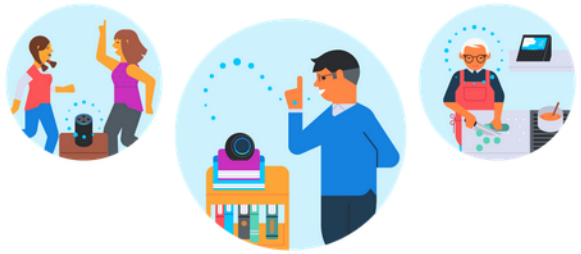
Claim 22	Application of U.S. Patent No. 9,264,483 to Amazon
22. A method for enabling one or more communication devices to remotely execute one or more applications, comprising:	By supporting, developing, implementing, and/or otherwise providing the Amazon Alexa platform, Amazon has practiced a method for enabling one or more communication devices to remotely execute one or more applications. For instance, Amazon Alexa operates on a communication system including Alexa Voice Service (AVS), Alexa Skills Kit (ASK), Amazon Web Services (AWS) Lambda, Amazon Simple Storage Service (S3), and other supporting AWS elements, to allow Alexa-enabled communication devices, for example, Amazon Echo, to remotely execute one or more Amazon Alexa applications.

Why Alexa?

Alexa is Amazon's cloud-based voice service available on over 100 million of devices from Amazon and third-party device manufacturers. With Alexa, you can build natural voice experiences that offer customers a more intuitive way to interact with the technology they use every day. Our collection of tools, APIs, reference solutions, and documentation makes it easy for anyone to build with Alexa.

Start building for voice today by adding new capabilities to Alexa, connecting Alexa to devices, or integrating Alexa directly into your products.



Source: https://developer.amazon.com/alexa

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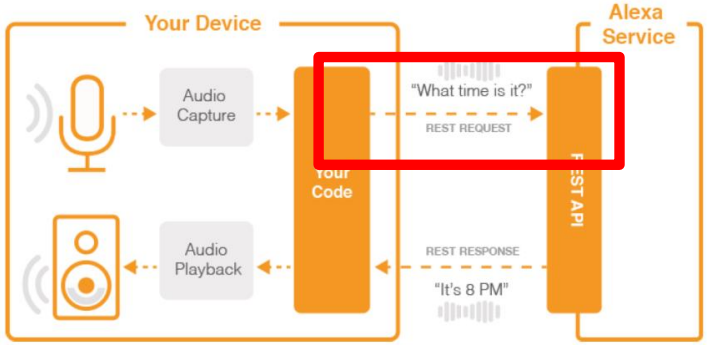
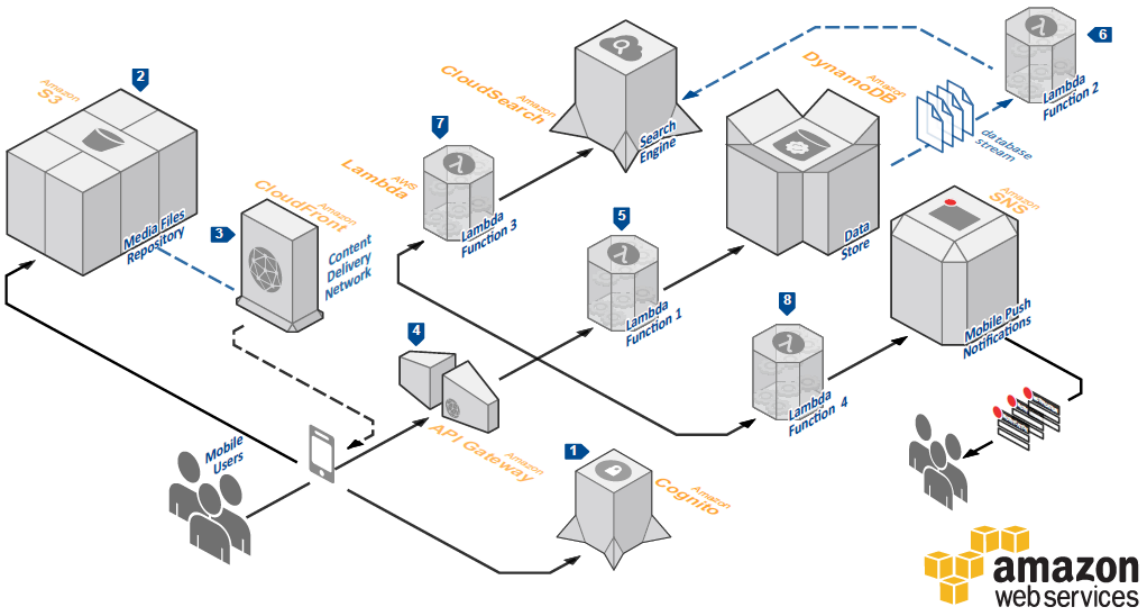
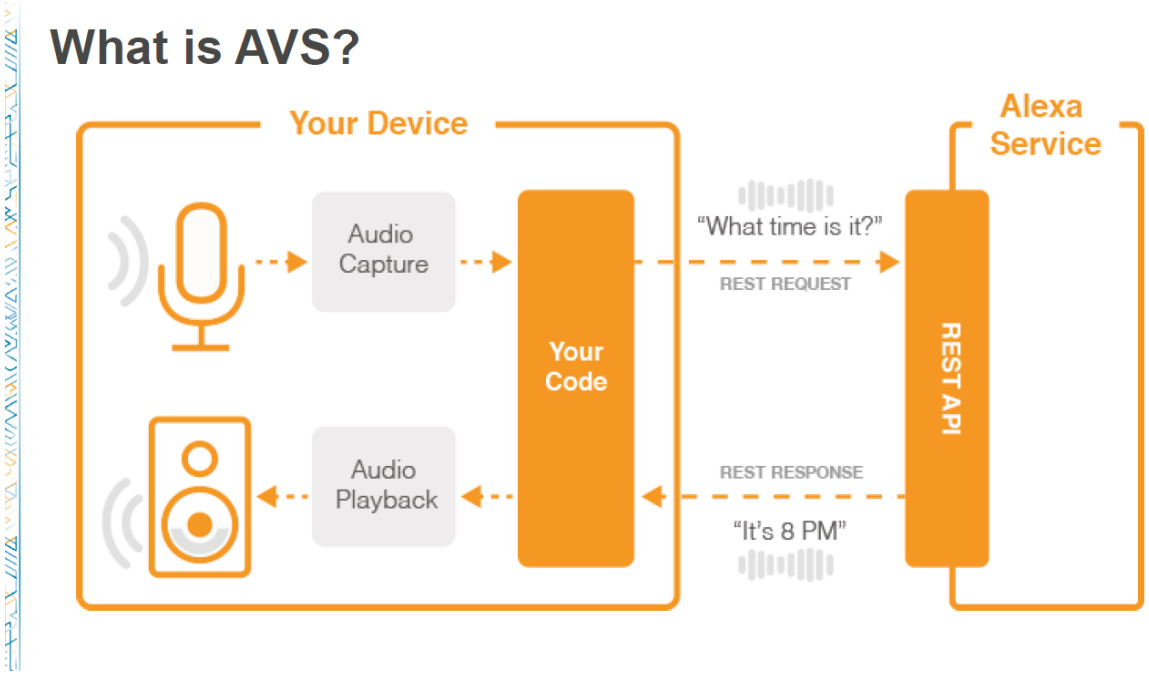
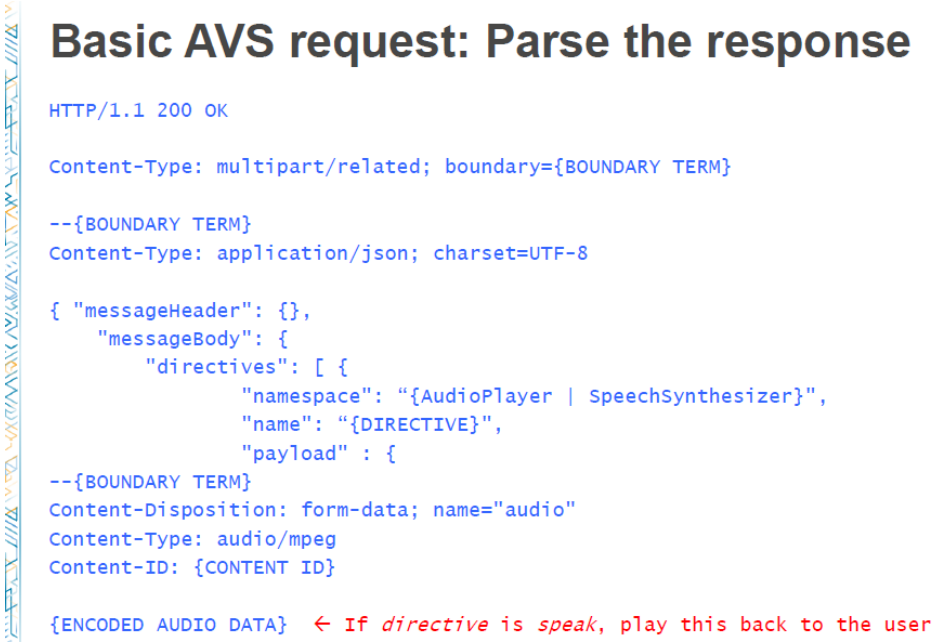
Claim 22 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
receiving a request to establish a communication session from at least one communication device over a first communication link comprising a data connection;	Amazon receives a request to establish a communication session (*e.g.*, an http request) from at least one communication device (*e.g.*, an Amazon Echo) over a first communication link comprising a data connection (*e.g.*, the Internet), as evidenced below. *See also*, Exhibit 2 at 12:18-12:58. **Basic AVS request** 1) Create an HTTP request 2) Collect the audio and send the request • *Use "Transfer-Encoding: Chunked" for streaming the request or set "Content-Length" for sending prerecorded audio* • *Avoid storing the audio* 3) Parse the response 4) Handle each directive **What is AVS?**  Source: Exhibit 1, at pp. 6, 8.

Claim 22 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
receiving over a second communication link an application from a repository having access to one or more applications maintained in a database coupled to the at least one repository;	Amazon receives over a second communication link an application from a repository having access to one or more applications maintained in a database coupled to the at least one repository. As a non-limiting example, at least one Amazon Alexa application server (*e.g.*, an AWS Lambda server) hosts and runs Amazon Alexa applications (*e.g.*, Alexa Skills). The AWS Lambda servers receive a deployment package and code of such applications from Amazon S3 (*e.g.*, a repository having access to one or more applications maintained in a database) over a second communication link (*e.g.*, a link between the AWS lambda server and S3). **AWS LAMBDA: MOBILE BACKEND**  Source: Exhibit 3.

Claim 22 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
executing the application to establish the requested communication session over the data connection, wherein the application is executed remotely from the at least one communication device;	Amazon executes the application to establish the requested communication session over the data connection (*e.g.*, an Amazon server executes the application in response to the http request to establish a communication session), wherein the application is executed remotely from the at least one communication device, as shown below.  Source: Exhibit 1, pg. 6.

Claim 22 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
communicating a request for processing service to the at least one communication device, wherein the request for processing service is communicated to the at least one communication device over the data connection, the request for processing service comprising one or more queries for information from a user.	Amazon communicates a request for processing service to the at least one communication device, wherein the request for processing service is communicated to the at least one communication device over the data connection. As a non-limiting example, the Amazon Alexa application servers such as the AVS servers and/or the AWS Lambda servers implement multi-turn dialogs in AVS and Alexa Skills to solicit information from, and confirm information and user request intent from the Alexa-enabled device, such as the Amazon Echo, and its users. As shown below, an Amazon server may send a request for processing service (*e.g.*, a "SPEAK" directive w/ encoded audio data) to a communication device (*e.g.*, an Amazon Echo that plays the audio data to a user).  Source: Exhibit 1, pg. 11. *See also*, Exhibit 2 at 16:30-18:30.

Claim 22 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon
communicating a request for processing service to the at least one communication device, wherein the request for processing service is communicated to the at least one communication device over the data connection, **the request for processing service comprising one or more queries for information from a user**.	The request for processing service comprising one or more queries for information from a user. As a non-limiting example, as established *supra*, Amazon Alexa application servers (such as the AVS servers and/or AWS Lambda servers) may communicate a request for processing service in the form of an audio question to solicit information from a user and/or confirm information / intent with the user. One example includes where a user instructs Amazon Alexa to set a timer by speaking the phrase "Alexa, set a timer" to the Amazon Echo device. Amazon Alexa responds with the question, "for how long?" to solicit timer duration information from the user. This question is communicated to and played back by the Amazon Echo device. *See e.g.*, Exhibit 2 at 5:00-6:00. Another example includes where an Amazon Alexa server performs a "multi-turn dialog" with an Amazon Echo. Amazon describes a "multi-turn dialog" as "*a conversation with multiple turns* in which Alexa asks questions and the user responds with the answers." *See* Exhibit 5, at pp. 2-3. The conversation is tied to a specific intent representing the user's overall request. The questions and answers are intended to gather, validate, and confirm slot values (*e.g.*, values for reference spaces within a sequence, *see* https://developer.amazon.com/docs/custom-skills/slot-type-reference.html). The conversation continues until all slots needed for the intent are filled and confirmed according to the rules defined in Amazon's dialog model. Responses sent by Amazon servers eliciting information from a user are requests for processing service comprising one or more queries for information from a user, as evidenced above and on the following page.

Claim 22 (cont'd)	Application of U.S. Patent No. 9,264,483 to Amazon

communicating a request for processing service to the at least one communication device, wherein the request for processing service is communicated to the at least one communication device over the data connection, **the request for processing service comprising one or more queries for information from a user**.	The queries for information from a user that an Amazon Alexa server provides fall into four categories in a multi-turn dialog: (1) slot elicitation, (2) slot confirmation, (3) intent confirmation, and (4) slot validation. Each of these categories include requests for processing service comprising one or more queries for information from a user, as evidenced below.
	
	• *Slot elicitation*: Ask the user for a slot value. The user answers with a slot value or a full utterance including the slot value. Examples of slot elicitation questions:
	  • **Alexa:** What city are you leaving from? *(Eliciting the value for a* `fromCity` *slot.)*
	  • **Alexa:** Where are you traveling to? *(Eliciting the value for a* `toCity` *slot.)*
	  • **Alexa:** When did you want to travel? *(Eliciting the value for a* `travelDate` *slot.)*
	
	• *Slot confirmation*: Ask the user to confirm that a *single slot value* previously provided (or set programmatically) is correct. The user answers with "yes" or "no". Examples of slot confirmation questions:
	  • **Alexa:** You said you're leaving from *Seattle*, right? *(Confirming the* `fromCity` *value.)*
	  • **Alexa:** Did you want to travel to *Portland*? *(Confirming the* `toCity` *value.)*
	  • **Alexa:** You're traveling on *April 21st*, right? *(Confirming the* `travelDate` *value.)*
	
	• *Intent confirmation*: Ask the user to verify that *all* the information gathered for the intent is correct before fulfilling the intent. As with slot confirmation, the user answers with "yes" or "no". Examples of intent confirmation questions:
	  • **Alexa:** I'm saving your trip from *Seattle* to *Portland* on *April 21st*. Is that OK? *(Confirming the entire* `PlanMyTrip` *intent.)*
	
	• *Slot validation*: Check the slot value against pre-defined rules and prompt the user if it fails. The user can then respond with a corrected value. Example:
	  • **Alexa:** I can't plan a trip for a date that has passed, so please tell me a date in the future *(Prompt after user provided a date before today for the* `travelDate` *slot.)*
	
	Source: Exhibit 5, at pp. 2-3.

Claim 24	Application of U.S. Patent No. 9,264,483 to Amazon
24. The method of claim 22, wherein the at least one communication device comprises a thin-client software program that provides the processing services to the application by facilitating communication between the user and the at least one application server via the at lest (*sic*) on (*sic*) communication device.	Amazon practices a method where the at least one communication device comprises a thin-client software program (*e.g.*, Amazon Echo software) that provides the processing services to the application by facilitating communication between the user (*e.g.*, a user of an Amazon Echo / Alexa) and the at least one application server (*e.g.*, an Amazon server) via the at **least one** communication device (*e.g.*, the Amazon Echo), as evidenced below. **2. What happens when I speak to Alexa?** When you speak to Alexa, a recording of what you asked Alexa is sent to Amazon's cloud where we process your request and other information to respond to you. For example, when you ask "Alexa, play top hits on Amazon Music" we use the recording of your request and information from Amazon Music to play top hits. **3. Is Alexa recording all my conversations?** No. By default, Echo devices are designed to detect only your chosen wake word (Alexa, Amazon, Computer or Echo). The device detects the wake word by identifying acoustic patterns that match the wake word. No audio is stored or sent to the cloud unless the device detects the wake word (or Alexa is activated by pressing a button). With Alexa Guard, you can also configure supported Echo devices to detect specific sounds, such as the sound of smoke alarms, carbon monoxide alarms, and glass breaking. See the FAQ "How does Alexa Guard work?" for more information. Source: Exhibit 7, pg. 1.

Claim 25	Application of U.S. Patent No. 9,264,483 to Amazon
25. The method of claim 22, wherein the request for processing service comprises one or more instructions to present information to the user.	The request for processing service comprises one or more instructions to present information to the user. Amazon Alexa servers routinely provide instructions to a communication device (*e.g.*, an Amazon Echo) to present information to a user. As a non-limiting example, certain AVS response directives comprise one or more instructions to present information to a user. As shown below, at least the AVS response directives "PLAY" and "SPEAK" result in the presentation of information to a user. **AVS response directives** **Directive** | **Meaning** clearQueue | Clear the playback queue listen | Multi-turn interaction - listen for more audio play | Play a streaming URL speak | Speak the Alexa response to the user stop | Stop streaming playback Source: Exhibit 1, at p. 12.

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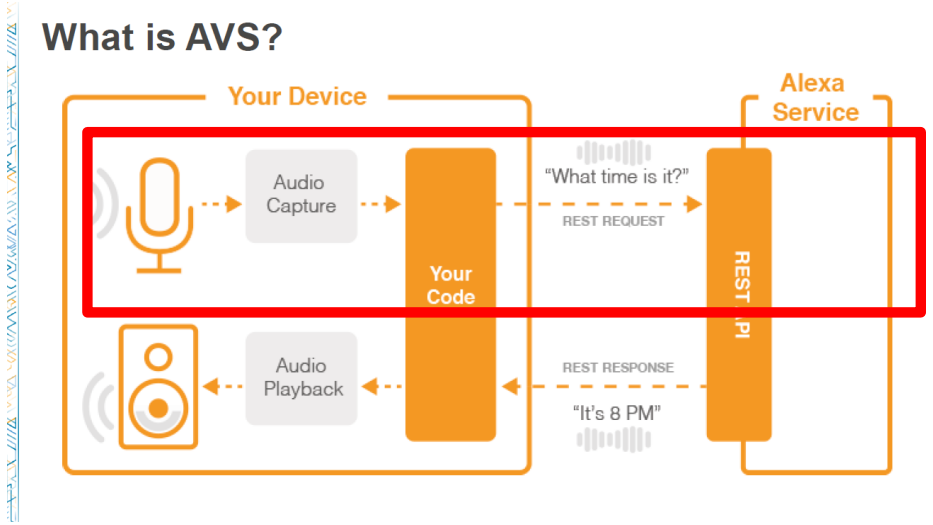
Claim 28	Application of U.S. Patent No. 9,264,483 to Amazon
28. The method of claim 22, further comprising receiving from the at least one communication device a response to the one or more queries for information, wherein the response to the one or more queries is provided through a touch input or a voice input.	Amazon receives from the at least one communication device a response to the one or more queries for information, wherein the response to the one or more queries is provided through a touch input or a voice input. As a non-limiting example, the response demonstrated in Exhibit 2 at 5:25-6:00 is a voice input. Furthermore, as shown below, one of the basic functionalities of the Amazon Alexa service is processing voice inputs. *See also*, Alexa and Alexa Devices FAQs, *available at* https://www.amazon.com/gp/help/customer/display.html?nodeId=201602230 (hereinafter "Exhibit 7"). Additional examples of a voice input are illustrated in Exhibit 5. In addition, the response to the one or more queries may be provided through a touch input for certain Alexa-enabled devices. As one example, the Amazon Echo Show includes a touchscreen that allows for a user to provide a response to one or more queries utilizing a touch input. *See* Exhibit 7, at pp. 5-6.  Source: Exhibit 1, pg. 6.