IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

AON RE, INC.,   )
)
                Plaintiff,   )
)   C.A. No. _____
       v.   )
)   **TRIAL BY JURY DEMANDED**
ZESTY.AI, INC.   )
)
                Defendant.   )

COMPLAINT FOR PATENT INFRINGEMENT

1.   Plaintiff Aon Re, Inc. ("Plaintiff" or "Aon") files this Complaint for patent infringement and demand for jury trial against Defendant Zesty.ai, Inc. ("Defendant" or "Zesty"), and alleges as follows:

NATURE OF THE ACTION

2.   This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1, *et seq.*, including 35 U.S.C. § 271, which gives rise to the remedies specified under 35 U.S.C. §§ 281 and 283-285.

THE PARTIES

3.   Plaintiff Aon is a corporation organized under the State of Illinois, with its principal place of business at 200 East Randolph Street, Chicago, IL, 60601.

4.   Aon is a corporation offering a range of insurance and reinsurance related services, including brokerage, analytics, administration, risk management, and other advisory services. For decades, Aon has been widely regarded as an innovator in the insurance and reinsurance space. The patents that are the subject of this lawsuit represent some of Aon's innovative developments in this field.

1

5.   Upon information and belief, Defendant Zesty is a corporation organized under the laws of the State of Delaware, with its principal place of business at 548 Market Street, Suite 75392, San Francisco, CA 94104.

JURISDICTION AND VENUE

6.   This is a complaint including causes of action for patent infringement arising under 35 U.S.C. § 271, *et seq.* This Court has subject matter jurisdiction under 28 U.S.C. § 1331 (federal question jurisdiction), and 28 U.S.C. § 1338(a) (jurisdiction over patent actions).

7.   This Court has general personal jurisdiction over Defendant at least because Defendant is incorporated in Delaware and, upon information and belief, Defendant has committed acts of patent infringement in Delaware and Defendant regularly conducts business, solicits business, and/or derives substantial revenue from products and/or services provided within Delaware, including products that infringe Aon's patented technology.

8.   Venue is proper in this judicial district pursuant to 28 U.S.C. § 1400(b) at least because Defendant is incorporated in Delaware.

THE PATENTS-IN-SUIT

9.   The patents-in-suit represent pioneering work by the named inventor, Takeshi Okazaki. Mr. Okazaki developed the disclosed inventions as part of Aon's insurance and reinsurance related focus on predicting and/or mitigating risk that results from natural disasters and other events. For example, Aon's innovative, patented technology provides for enhanced disaster risk techniques and assessments relating to, for example, roofs, including through aerial imagery, specialized image data formations for enhanced image feature identification and characterization, and specially programmed machine learning classifiers able to determine characteristic conditions based upon such image data formations. As a leading innovator in the

2

insurance and reinsurance field, Aon has invested heavily in technology and has amassed a substantial portfolio of more than one hundred (100) patents, including U.S. Patent Nos. 10,529,029; 10,650,285; 11,030,491; and 11,195,058 (collectively, the "patents-in-suit").

10.   U.S. Patent No. 10,529,029 ("the '029 patent"), titled "Platform, Systems, And Methods for Identifying Property Characteristics and Property Feature Maintenance through Aerial Imagery Analysis," was duly and legally issued by the United States Patent and Trademark Office on January 7, 2020. Aon is the owner of the '029 patent, with all substantial rights, including the exclusive right to enforce, sue, and recover damages for past and future infringements. A copy of the '029 patent is attached as Exhibit 1.

11.   U.S. Patent No. 10,650,285 ("the '285 patent"), titled "Platform, Systems, And Methods for Identifying Property Characteristics and Property Feature Conditions through Aerial Imagery Analysis," was duly and legally issued by the United States Patent and Trademark Office on May 12, 2020. Aon is the owner of the '285 patent, with all substantial rights, including the exclusive right to enforce, sue, and recover damages for past and future infringements. A copy of the '285 patent is attached as Exhibit 2.

12.   U.S. Patent No. 11,030,491 ("the '491 patent"), titled "Platform, Systems, And Methods for Identifying Property Characteristics and Property Feature Conditions through Imagery Analysis," was duly and legally issued by the United States Patent and Trademark Office on June 8, 2021. Aon is the owner of the '491 patent, with all substantial rights, including the exclusive right to enforce, sue, and recover damages for past and future infringements. A copy of the '491 patent is attached as Exhibit 3.

13.   U.S. Patent No. 11,195,058 ("the '058 patent"), titled "Platform, Systems, And Methods for Identifying Property Characteristics and Property Feature Conditions through Aerial

Imagery Analysis," was duly and legally issued by the United States Patent and Trademark Office on December 7, 2021. Aon is the owner of the '058 patent, with all substantial rights, including the exclusive right to enforce, sue, and recover damages for past and future infringements. A copy of the '058 patent is attached as Exhibit 4.

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ZESTY'S KNOWLEDGE OF THE PATENTS-IN-SUIT

</div>

14.   Zesty had pre-filing knowledge of its infringement of the patents-in-suit. For example, Zesty has had actual knowledge of the'029 and '285 patents since summer of 2020.

15.   Aon provided Zesty with formal notice of Zesty's infringement of the patents-in-suit through a notice letter dated April 20, 2023, with follow up claim charts provided in September 2023.

16.   Zesty uses Aon's technology claimed in the patents-in-suit to directly compete with Aon.

17.   Despite Aon's best efforts, Zesty has refused to engage in meaningful licensing discussions and otherwise has refused to provide a basis for any defense to infringement of the patents-in-suit. Accordingly, and while Aon would have preferred resolution of this dispute without recourse to the courts, Aon is left with little choice but to bring this lawsuit to halt Zesty's willful infringement of the patents-in-suit.

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AON'S PIONEERING TECHNOLOGY

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18.   Amongst the innovations disclosed in the patents-in-suit is an improved computer architecture for automatically assessing property vulnerabilities arising from their characteristics. Automatically assessing property vulnerabilities is necessarily rooted in computer technology. The disclosed system provides an improved computer architecture for such assessments that "improve processing efficiency of the system to reduce an amount of time it takes to perform the

condition assessments and automate a condition assessment process." Ex. 1 at 21:22-24. The improved computer architecture also "automatically extract[s] characteristics of individual properties, providing fast and efficient automated classification of building styles and repair conditions." *Id*. at 2:8-11. "In combining location-based vulnerabilities with individual property vulnerabilities identified in part through classification of repair conditions of one or more property features, risk of damage due to disaster can be more accurately estimated." *See*, *e.g.*, *id.* at 2:11-15.

19.   The improved computer architecture runs on one or more hardware processors and includes: a) **an engine that acquires imagery from an imagery source that is accessible in response to a user request**; b) **an engine for extracting property features from an image selected from the database, *e.g.*, in the form of pixels**; c) **a machine learning algorithm specifically trained to determine a property characteristic**; d) **a machine learning algorithm specifically trained to determine the condition of an identified property characteristic**; e) **an engine that determines a risk estimate of damage based on inputs received from the machine learning algorithms**; and f) **an engine that provides to the user a graphical output including information reflecting the structural condition of a property as well as the risk of damage due to, e.g., natural disaster**.

20.   For example, Fig. 3 below depicts an overall system disclosing an embodiment including the improved computer architecture claimed in the patents-in-suit as discussed above, color-coded to match the components of the claimed architecture as set forth in paragraph 19, *supra*.
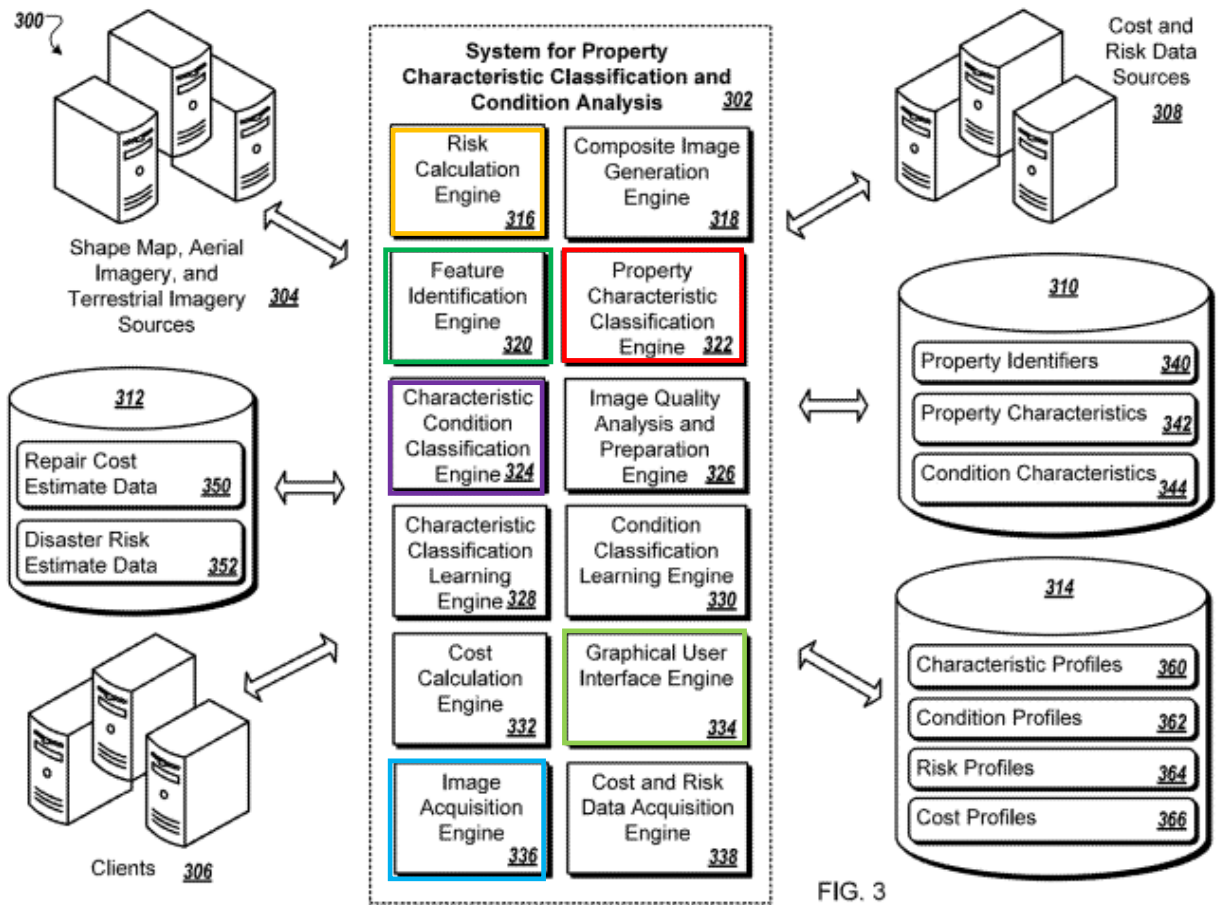
FIG. 3

Id. at FIG. 3 (annotated).

21.   The improved architecture further automates prior processes of manually obtaining

data about, for example, roof condition and then comparing that to manually obtained control data

that allowed an insurer to predict roof condition as part of a property risk assessment. These prior

processes executed on a fundamentally inferior architecture.

22.   For example, during prosecution of the patents-in-suit, the examiner identified U.S.

Patent No. 8,775,219 to Swanson ("Swanson") as among the "closest prior art." Ex. 5 at 5.

Swanson is directed to the use of "reflectance" data to predict certain information about a roof.

The reflectance data is obtained by using an airborne platform equipped with sensors that is flown

over structures. This process collects imaging data which is provided to a processor. The

processor compares the sensed information to a database with reflectance data that corresponds to a certain type of roof shingle. For example, reflectance data is stored for a roof comprised of asphalt shingles. If the reflectance data collected by the aircraft sensors matches the stored reflectance data for an asphalt shingled roof, the system predicts that the roof is comprised of asphalt shingles. From this determination, an insurer may gather limited information to assess risk. Swanson thus discloses a primitive computer architecture for determining a property's roof type, which includes spectral images, a process, and a database storing predetermined information corresponding to a certain roof type.

23.   Whereas prior architectures included a processor and a database storing data that could be compared to manually obtained data, the improved computer architecture of the patents-in-suit includes inventive machine learning algorithms that more holistically, accurately, and efficiently assess the structural condition of a property. This improved computer architecture automates the process of obtaining property characteristic information by drawing from an imagery database and assessing those images by feature extraction with the extracted features fed into a machine learning algorithm running on a process that determined various data outputs for input into a structural condition assessment. The machine learning algorithms are specifically trained to provide certain types of information about an extracted property feature (*e.g.*, roof type, roof shape, roof condition).

24.   Further, the multi-step specific machine learning algorithm techniques that are claimed in the patents-in-suit improve processing efficiency and speed. Specifically, because the automated imagery analysis may be divided among one or more specifically trained machine learning algorithms, the processor resources available to the user can be more efficiently used, e.g., as opposed to attempting to analyze the image in a single shot. This increase in processing

efficiency is an improvement to computer functionality that results directly from the inventive multi-step machine learning algorithm analysis applied to property features that are automatically extracted from aerial imagery. A single algorithm would dominate a single processor resource, wasting time and failing to take advantage of all available processing resources.

26.   In addition, because the algorithms can run concurrently, the overall speed of the automated process is increased. To that end, the specification explains that "CPU 600 may be implemented as multiple processors cooperatively working in parallel to perform the instructions of the inventive process described above." Ex. 1 at 21:55-58. This increase in speed is an improvement to computer functionality that results directly from the inventive multi-step machine learning algorithm analysis applied to property features that are automatically extracted from aerial imagery.

26.   The multi-step analysis also provides superior accuracy in risk assessment. For example, the multi-step analysis provides more granular detail on a roof including shape, material, and condition. As the level of detail returned by the analysis becomes more granular, the accuracy of the automatic risk assessment generated from the improved computer architecture improves.

27.   The patents-in-suit each claim an improved computer architecture that results in improvements to computer functionality in the form of increased processing speed, efficiency, and overall accuracy of the automated process as discussed above. This architecture uses specific techniques to automate the evaluation of a structural condition of a property and for assessing property vulnerabilities. For example, claim 1 of the '029 patent recites a "method for automatically categorizing a repair condition of a property characteristic." *Id.* at 24:17-18. Claim 1 of the '029 patent recites an improved computer architecture implementing a specific technique of using multiple machine learning classifiers that are each trained to identify specific types of

property information from pixel groupings to automate structural condition assessment and risks

associated therewith with improved processing speed, efficiency, and accuracy:

> receiving, from a user at a remote computing device, a request for a property condition classification, wherein the property classification request includes identification of a property and at least one property characteristic;
>
> **obtaining, by processing circuitry of a computing system responsive to receiving the request, an aerial image** of a geographic region including the property;
>
> **extracting, by the processing circuitry, one or more of a plurality of features from the aerial image** corresponding to the property characteristic, wherein **the extracted features include pixel groupings representing the property characteristic**;
>
> determining, by the processing circuitry from the extracted features, a property characteristic classification for the property characteristic, wherein determining the property characteristic classification includes **applying the pixel groupings for the property characteristic to a first machine learning classifier trained to identify property characteristics from a set of pixel groupings**;
>
> determining, by the processing circuitry based on the identified property characteristic and the extracted features, a condition classification for the property characteristic, wherein identifying the condition classification includes **applying the pixel groupings for the property characteristic to a second machine learning classifier trained to identify property characteristic conditions from a set of pixel groupings**;
>
> determining, by the processing circuitry based in part on the property characteristic classification and the condition classification, **a risk estimate of damage to the property due to one or more disasters**
>
> returning, to the user at the remote computing device via a graphical user interface responsive to receiving the request, **a condition assessment of the property characteristic including the condition classification and the risk estimate of damage to the property due to the one or more disasters**.

Id. at 24:19-57 (emphasis added).

28.   Thus, claim 1 of the '029 patent recites the improved computer architecture by

obtaining an aerial image, extracting features from the image, analyzing the extracted features with

machine learning algorithms specifically trained to identify particular types of information,

determining a risk estimate, and providing the risk estimate to a user. This multi-step architecture

provides improved processing speed and efficiency by allowing the machine learning algorithms

to execute on different physical processors. At the same time, the specificity of the data identified

by the machine learning algorithm improves the accuracy of the automated process for assessing

a property's structural condition and the risks associated therewith.

29.   As another example, claim 1 of the '285 patent recites a "method for automatically

categorizing a condition of a characteristic of a property." Ex. 2 at 24:64-65. Claim 1 of the '285

patent recites another improved computer architecture implementing a specific technique of using

multiple machine learning classifiers that are each trained to identify specific types of property

information from pixel groupings to automate structural condition assessment and risks associated

therewith with improved processing speed, efficiency, and accuracy:

> obtaining, by processing circuitry, **an aerial image of a geographic region including the property;**
>
> **extracting**, by the processing circuitry, one or more features of a plurality of features from the aerial image, wherein
>
>> **the one or more features are each represented by a set of pixel groupings,**   and
>>
>> **the one or more features represent the characteristic of the property,** wherein
>>
>>> each pixel grouping of the set of pixel groupings comprises at least one of angles, outlines, or substantially homogenous pixel fields;
>
> applying, by the processing circuitry, a first portion of the set of pixel groupings to **a first machine learning classifier to determine a characteristic classification of the characteristic from a plurality of potential classifications of the characteristic**, wherein
>
>> the first machine learning classifier is trained to identify at least a portion of the one or more features from the first portion of the set of pixel groupings; and

applying, by the processing circuitry, a second portion of the set of pixel groupings to **a second machine learning classifier to determine a condition classification of the characteristic from a plurality of potential condition classifications of the characteristic**, wherein

> the second machine learning classifier is trained to identify, from the second portion of the set of pixel groupings, property characteristic conditions of the characteristic having the characteristic classification

Id. at 24:66-25:27 (emphasis added).

30.   Claim 3 of the '285 patent further recites: "The method of claim 1, further comprising preparing, by the processing circuitry for presentation to a user, a graphical report comprising condition information regarding the condition classification." *Id.* at 25:32-35.

31.   Thus, claim 1 of the '285 patent recites the improved computer architecture by obtaining an aerial image, extracting features from the image, and analyzing the extracted feature with machine learning algorithms specifically trained to identify particular types of information. Claim 3 further limits claim 1 to preparing a graphical report reflecting the condition of the property characteristic analyzed by the specially trained machine learning algorithm. This multi-step architecture provides improved processing speed and efficiency by allowing the machine learning algorithms to execute on different physical processors. At the same time, the specificity of the data identified by the machine learning algorithm improves the accuracy of the automated process for assessing a property's structural condition and the risks associated therewith.

32.   As a further example, claim 1 of the '491 patent recites a "system for automatically assessing features of a property location comprising a structure." Ex. 3 at 25:2-3. Claim 1 of the '491 patent recites another improved computer architecture implementing a specific technique of using multiple machine learning classifiers that are each trained to identify specific types of property information from pixel groupings to automate structural condition assessment and risks associated therewith with improved processing speed, efficiency, and accuracy:

access a plurality of images of the property location including the structure,

apply boundary information to one or more images of the plurality of images to **isolate the property location or the structure thereon within each respective image**, and

classify a condition of one or more property features of the property location, wherein classifying comprises, for each feature of the one or more features, **extracting the respective feature from each image of at least one image of the one or more images**,

  applying a set of machine learning analysis algorithms to at least a portion of each image of the at least one image to **determine a set of characteristics of the respective property feature**, wherein

    each algorithm of the first set of machine learning analysis algorithms is trained to identify one or more characteristics of the set of characteristics, and

  applying another machine learning analysis algorithm to at least a portion of each image of the at least one image to classify a condition of the respective property feature, wherein

    the condition is classified as a respective classification of a set of possible classifications, and

    the another machine learning analysis algorithm is trained to **identify one or more conditions of property locations and/or structures** thereon having the set of characteristics of the respective property feature.

Id. at 25:10-41 (emphasis added).

33. Thus, claim 1 of the '491 patent recites the improved computer architecture by accessing an image, applying boundary information to the image, extracting features from the image, and analyzing the extracted feature with machine learning algorithms specifically trained to identify particular types of information. This multi-step architecture provides improved processing speed and efficiency by allowing the machine learning algorithms to execute on different physical processors. At the same time, the specificity of the data identified by the

machine learning algorithm improves the accuracy of the automated process for assessing a property's structural condition and the risks associated therewith.

34.   In another example, claim 1 of the '058 patent recites a "system for automatically assessing features of a property location comprising a structure." Ex. 4 at 25:2-3. Claim 1 of the '058 patent recites another improved computer architecture implementing a specific technique of using multiple machine learning classifiers that are each trained to identify specific types of property information from pixel groupings to automate structural condition assessment and risks associated therewith with improved processing speed, efficiency, and accuracy:

> a non-volatile computer readable medium storing
>
>> a set of property characteristic profiles, each property characteristic profile of the set of property characteristic profiles being developed through training **one or more machine learning algorithms using first property images to identify one or more characteristics of at least one property feature of one or more property features**, and
>>
>> a set of property condition profiles, each property condition profile of the set of property condition profiles being developed through training **one or more machine learning algorithms using second property images to identify one or more conditions of at least one property characteristic** of one or more property characteristics corresponding to a given feature or features of the one or more property features; and
>
> processing circuitry configured to
>
>> receive, from a user at a remote computing device via a network, a request comprising identification of a property location,
>>
>> **access aerial imagery of the property location**,
>>
>> classify a condition of one or more features of the property location, wherein classifying comprises, for each feature of the one or more features,
>>
>>> **identifying the respective feature from at least one image obtained from the aerial imagery**,
>>>
>>> applying one or more property characteristic profiles of the set of property characteristic profiles to at least a portion of each image of

the at least one image to **determine a plurality of characteristics of the respective feature**, wherein

a first characteristic of the plurality of characteristics comprises a type of material of the feature or a shape of the feature, and

applying one or more property condition profiles of the set of property condition profiles to at least a portion of each image of the at least one image to **classify a condition of the respective property feature**

responsive to receiving the request, cause presentation of, for review by the user at the remote computing device, a graphical user interface comprising information regarding the plurality of characteristics and the condition of each feature of the at least one property feature.

Id. at 25:5-53 (emphasis added).

35.   Thus, claim 1 of the '058 patent recites the improved computer architecture by accessing an aerial image, applying boundary information to the image, extracting features from the image, and analyzing the extracted features with machine learning algorithms specifically trained to identify particular types of information. This multi-step architecture provides improved processing speed and efficiency by allowing the machine learning algorithms to execute on different physical processors. At the same time, the specificity of the data identified by the machine learning algorithm improves the accuracy of the automated process for assessing a property's structural condition and the risks associated therewith.

36.   The specifications of the patents-in-suit disclose detailed embodiments of the claimed improved computer architecture implementing a specific technique of using multiple machine learning classifiers that are each trained to identify specific types of property information from pixel groupings to automate structural condition assessment and risks associated therewith, resulting in improved processing speed, efficiency, and accuracy.

37.   Fig. 4 discloses a flow chart of a process performed using the improved architecture recited in the claims. "The flow chart, for example, may represent computational stages 104 through 112 as described in relation to FIG. 1." Ex. 1 at 18:57-59.
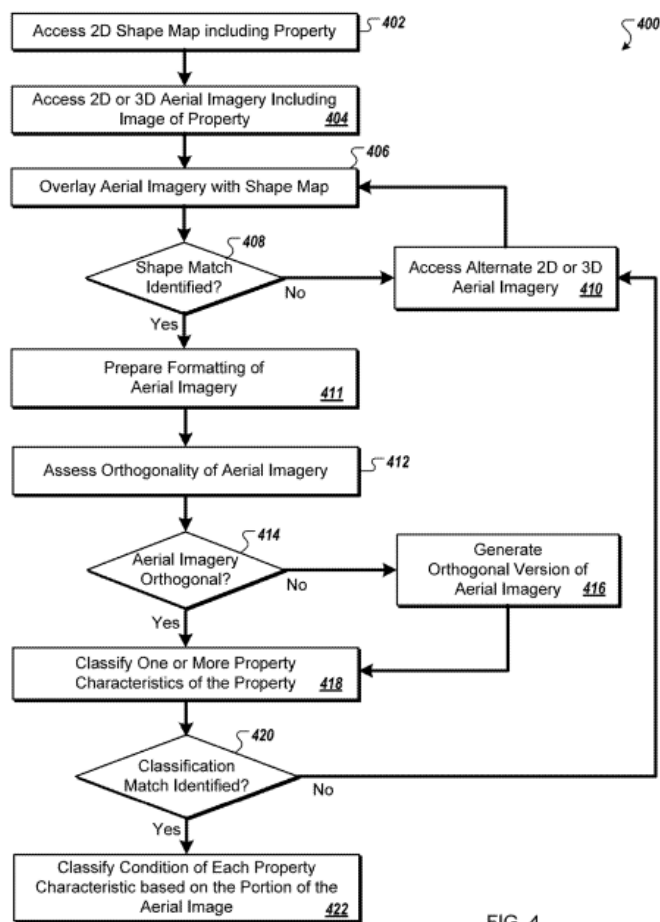

FIG. 4

Id. at FIG. 4.

38.   The multi-step process disclosed in Fig. 4 "begins with accessing a two-dimensional shape map including the shape of a property," which shape map "may be accessed by the image acquisition engine 336 from a shape map imagery source 304, as described in relation to FIG. 3." *Id.* at 18:61-65. The exemplary shape map image of Fig. 5A is reproduced below.
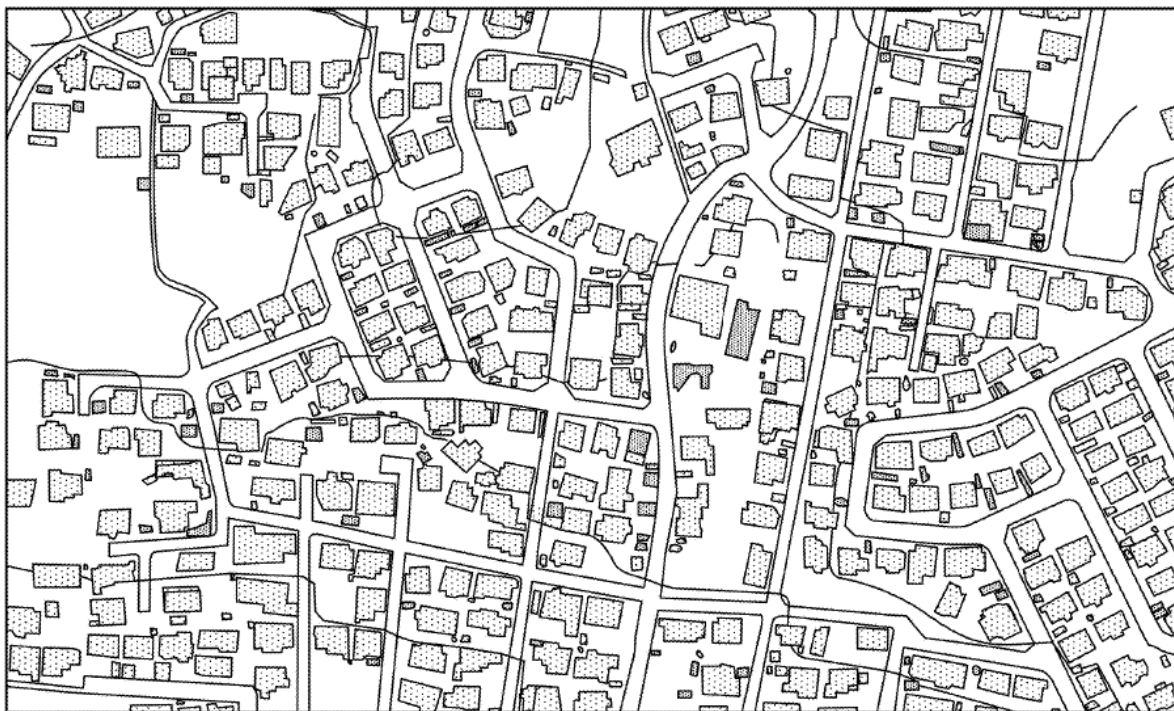
FIG. 5A

Id. at FIG. 5A.

39.   The next step involves accessing an image of a particular property, which "may be accessed by the image acquisition engine 336 from an aerial imagery source 304, as described in relation to FIG. 3." *Id*. at 19:6-9. Next, "the aerial imagery is overlaid with the shape map" to generate "a composite image," an example of which is shown in Fig. 5C and reproduced below. *Id*. at 19: 15-18.

FIG. 5C

Id. at FIG. 5C.

40.   If a shape map image cannot be matched with an aerial image, the disclosed process "could proceed without matching the shape map [image] to the aerial imagery." *Id*. at 19:35-36. That said, if a shape map image is identified, the aerial imagery is specially altered for use by the improved computer architecture. *Id*. at 19:37-38. For example, the image may be "cropped to include the property of interest or the property of interest plus a portion of its surroundings (e.g., the lot containing the property and/or a portion of the proximate neighborhood in which the property resides.)." *Id*. 19:39-43. "In some embodiments, in addition to cropping the image, the image may be resized. For example, depending upon the resolution of the aerial imagery, the image resolution may be reduced, for example, to fit within an X by X pixels square or an X by Y pixels rectangle." *Id*. at 19:49-53. The next step in Fig. 4 is to determine whether the aerial

17

imagery is orthogonal (e.g., a straight down image of a building), and if not, to generate an orthogonal version of the aerial imagery.

41.   With the image obtained and appropriately altered for use in accordance with the patented innovations, the next step in Fig. 4 is to assess the image for characteristics and condition of each characteristic. The characteristics and condition of each characteristic are identified through analysis performed by machine learning algorithms that are specifically trained to identify property characteristics and conditions from property features. "Using machine learning for analysis, for example, the system can extract pixel intensity distributions of previously identified property features of the aerial image of the particular property location 102b." *Id*. at 10:20-24. For example, "newly constructed property features generally have sharp contrast and well-defined features in machine learning image analysis. Conversely, weathered or damaged property features can have softened edges, blurred contrasts, and asymmetrical patches of wear." *Id*. at 10:24-28.

42.   In at least one embodiment, "the classifications of the condition of each of the property characteristics may b[e] output to a computing device of a requester (424) via a dashboard interface screen." *Id*. at 20:38-41. As another example, in addition to providing the condition classification for the property characteristics, the dashboard interface screen may include replacement costs for replacing the property characteristics, risk cost estimates due to damage from natural disasters, or confirmation of whether or not repairs have been made to the property characteristics. This useful output is facilitated by the improved computer architecture in the form of a quick and efficient classification scheme as described in the specification.

43.   The specification describes a number of beneficial use cases for its improved computer architecture. For example, the specification describes that the architecture "identifies (106) features of [] aerial image[s] [] to classify property characteristics. Using machine learning

for analysis, for example, the system can extract features of the aerial image of a particular property location 102b. Groupings of extracted features, such as angles, outlines, substantially homogenous fields, etc. can be used to identify property features such as a rooftop, swimming pool, chimney, and sky lights. *Id*. at 7:61-8:1. Further, the specification explains, "upon identification of features by the feature identification engine 320, a property characteristic classification engine 322 classifies the property characteristic." *Id*. at 15:34-37. In this implementation, "[t]he property characteristic classification engine 322, for example, may generate property characteristics 342 representing a grouping, type, or other characterization of a particular property feature." *Id*. at 15:40-43. Classification may be performed using classification profiles to classify property features, where "[e]ach property feature, for example, may be broken down into multiple classifications." *Id*. at 8:36-43. An illustrative example is provided in the specification, where "combinations of property characteristics" can include roof shape and roof material, such as "a gabled, shingled roof, a gabled, clay tiled roof, [and] a gabled, metal roof." *Id*. at 11:37.41.

44.   The machine learning algorithms of the improved computer architecture recited in the claims are specifically trained to identify different information based on the extracted property features. For example, one machine learning algorithm may be specifically trained to identify a property characteristic while another machine learning algorithm may be specifically trained to identify a condition of a property characteristic. In the example below, the machine learning algorithm has been specifically trained to identify a property characteristic in the form of roof shape:

> In an illustrative example, turning to FIG. 2A, extracted angular and outline features of aerial images 204 may be used to classify a roof shape 202 of the particular property location 102b. In a first example, a gable roof 202b includes a central peak upon a generally rectangular outline, as depicted in corresponding aerial image 204b. A gambrel roof 202a includes these features of the gable roof 202b but, as illustrated in aerial image 204a, the gambrel roof additionally includes a "skirt"

region surrounding the central gable-shaped portion. The "skirt" region can be identified, in part, based upon its corner edges extending from the four corners of the gable-shaped portion. A hipped roof 202c, as shown in aerial image 204c, includes a central peak and two opposing triangular ends extending from either end of the central peak. The central peak forms a top edge of two trapezoidal sections. A square roof 202d, in contrast, has no central peak. Instead, as illustrated in aerial image 204d, the square roof includes four triangular portions meeting at a central point. Finally, a flat roof 202e, as shown in aerial image 204e, is represented by a substantially flat surface outlined by a rectangle.

Id. at 8:50-9:3.

45.   The patents-in-suit further disclose figures demonstrating the training of the various machine learning models that are specifically trained to identify particular information from extracted property feature data. For example, Fig. 2B discloses training data for a machine learning algorithm specifically trained to classify roof condition:
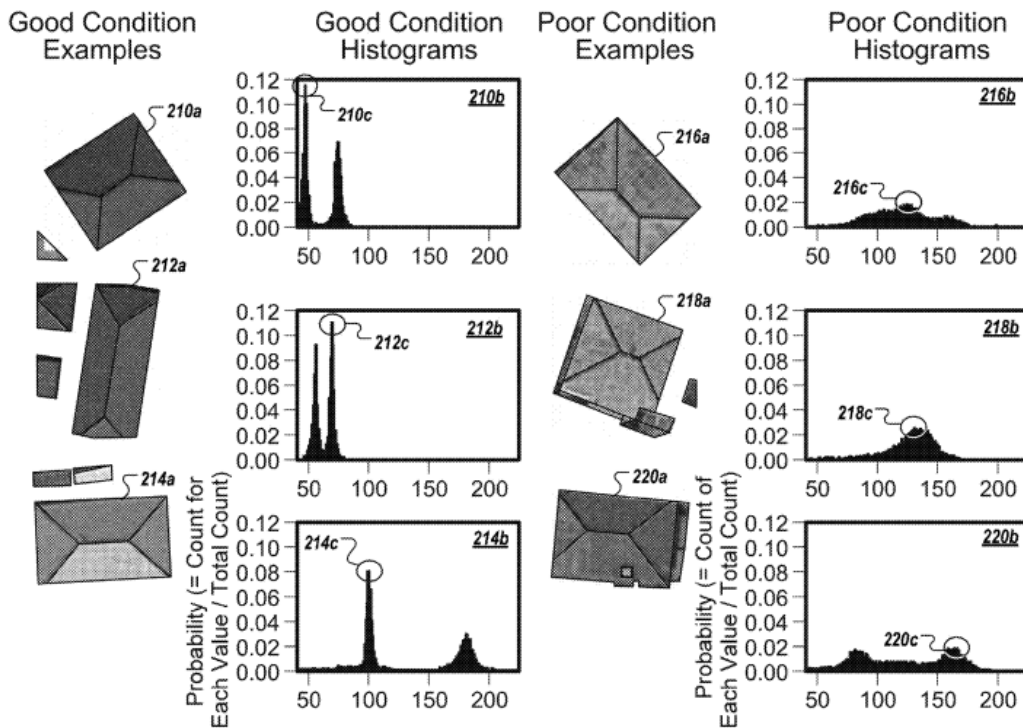
FIG. 2B

Id. at FIG. 2B.

46.   Fig. 2A discloses roof characteristic examples along with a risk profile corresponding to the characteristics identified by the machine learning models that are specifically trained to identify roof characteristics:
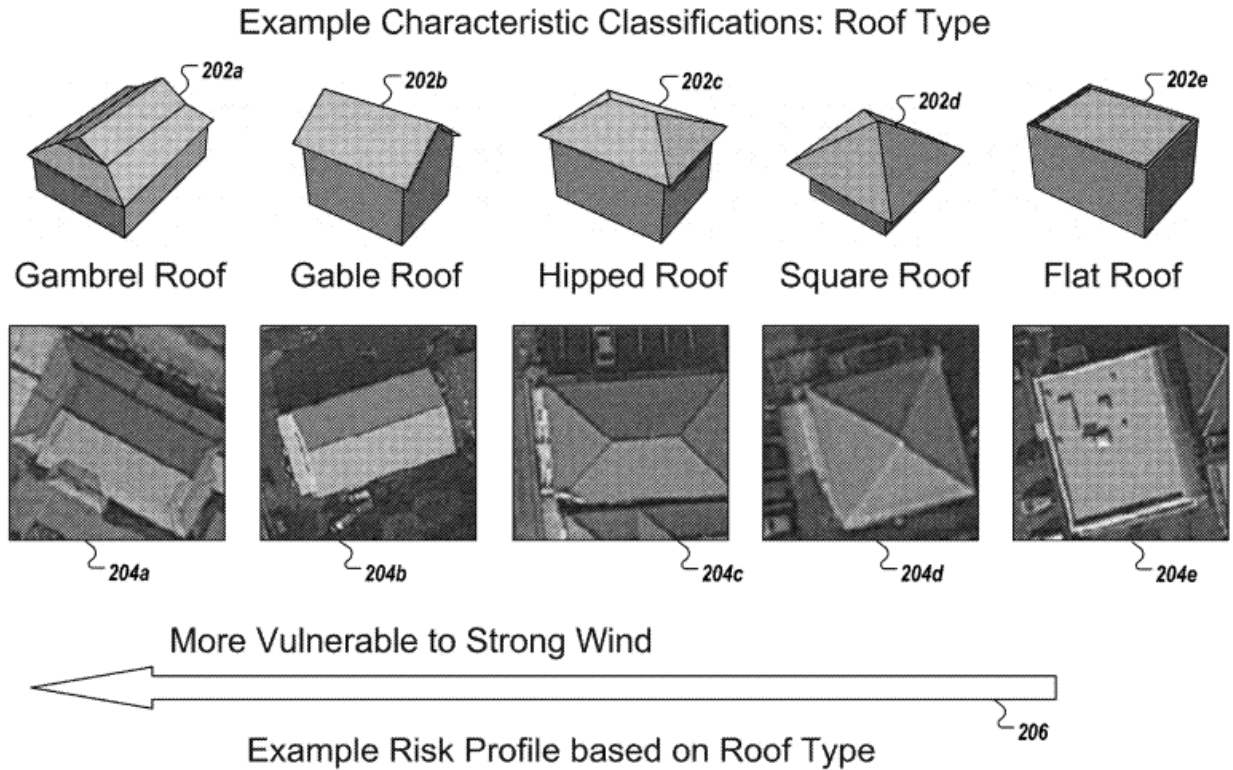

Example Characteristic Classifications: Roof Type

Gambrel Roof   Gable Roof   Hipped Roof   Square Roof   Flat Roof

More Vulnerable to Strong Wind

Example Risk Profile based on Roof Type

FIG. 2A

Id. at FIG. 2A.

47.   The patents-in-suit substantiate the accuracy of the specific multi-step machine learning algorithm techniques that provide input data into an automated process of determining the structural condition of a building and the risks associated therewith. For example, in Fig. 2D, the specification discloses "an example error rate graph 240 [that] compares training data 242 with accuracy of matching test data 244 in matching aerial image rooftop characteristics to corresponding rooftop type (e.g., shape)." *Id*. at 9:4-7. "As shown by the error rate graph 240, in

a test situation involving 2,250 sample images in a training dataset and 250 test images in a test dataset, the minimum error rate in determining rooftop condition was 6%, corresponding to an accuracy rate of 94%." *Id.* at 9:18-23. If further accuracy is desired, the specification explains that "the image can be cropped and/or resized prior to analyzing." *Id.* at 9:24-25. Fig. 2D is reproduced below.
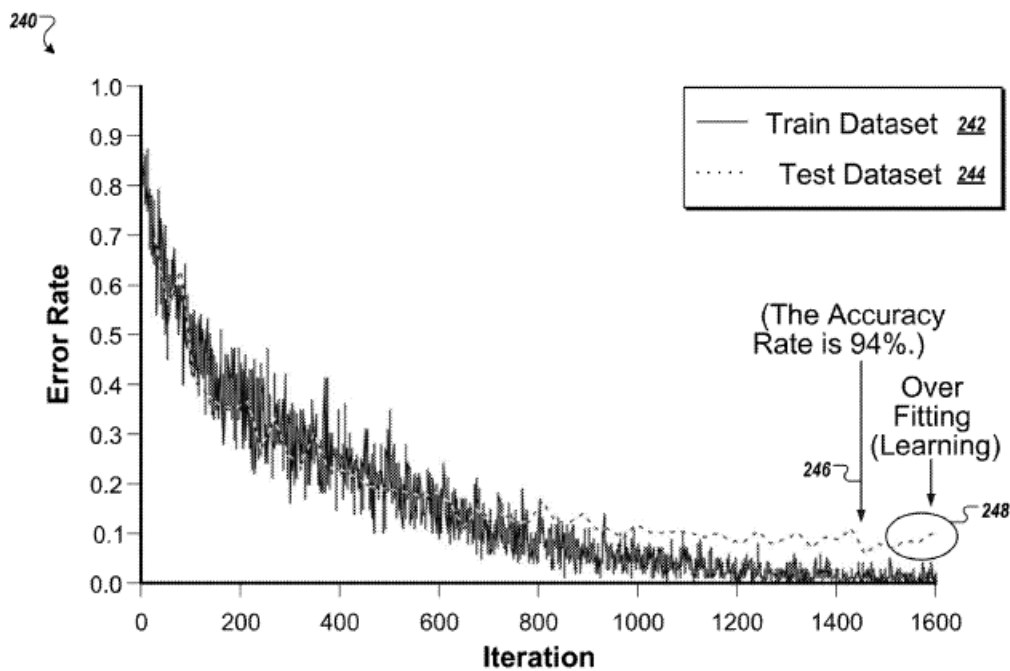

FIG. 2D

Id. at FIG. 2D.

COUNT ONE

DIRECT INFRINGEMENT OF U.S. PATENT NO. 10,529,029

48.   Aon incorporates by reference the allegations in paragraphs 1-47 as if fully set forth herein.

22

49.   On information and belief, Defendant has infringed claims of the '029 patent, including at least claims 1, 2, 3, 5, 15, 18, 19, and 20 in violation of 35 U.S.C. § 271(a) by making, using, offering to sell, selling, and/or importing infringing methods and products.

50.   For example, claim 15 of the '029 patent (Ex. 1) recites:

15. A non-transitory computer readable medium having instructions stored thereon, wherein the instructions, when executed by processing circuitry, cause the processing circuitry to:

receive, from a user at a remote computing device, a property condition classification request, wherein the property classification request includes identification of a property and at least one property characteristic;

obtain, from a remote data source responsive to receiving the property classification request, an aerial image of a geographic region including the property;

extract from one or more of a plurality of features from the aerial image corresponding to each property characteristic of the at least one property characteristic, wherein the extracted features include pixel groupings representing the respective property characteristic;

for each of the at least one property characteristic,

determine, from the extracted features for the respective property characteristic, a respective property characteristic classification, wherein determining the respective property characteristic classification includes applying the pixel groupings for the respective property characteristic to a first machine learning classifier trained to identify property characteristics from a set of pixel groupings, and

determine, based on the respective identified property characteristic and the respective extracted features, a respective condition classification for the respective property characteristic, wherein identifying the respective condition classification includes applying the respective pixel groupings for the respective property characteristic to a second machine learning classifier trained to identify property characteristic conditions from a set of pixel groupings; and

determine, in real-time responsive to receiving the property classification request and using the property characteristic classification of each property characteristic and the condition

classification of each property characteristic, at least one risk estimate representing risk of damage due to disaster.
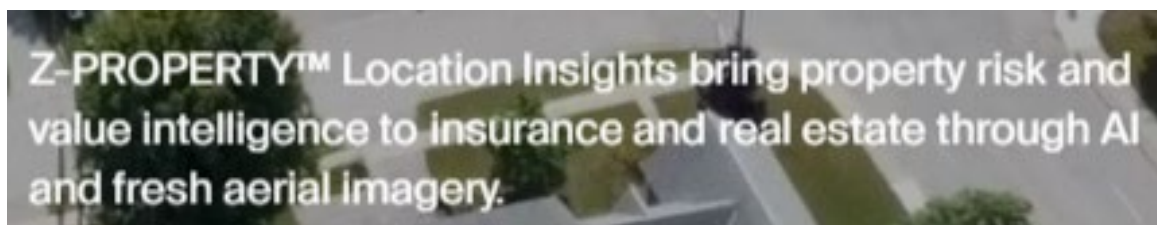
51.   On information and belief, Defendant has directly infringed at least claim 15 of the '029 patent by making, using, offering to sell, selling, and/or importing a commercial offering marketed as "Z-PROPERTY," which is also referred to as "Location Insights" on Defendant's website (https://zesty.ai/products/location-insights), and includes "Digital Roof," "Roof Age," "Z-VIEW," "Z-STORM," "Z-FIRE," "Z-WIND," and "Z-HAIL." *See*, *e.g.*, Ex. 6 at 39-48.

52.   According to Defendant's website, Z-PROPERTY allows "[a]ccurate property information [to be] automatically incorporated into underwriting for enhanced risk selection, better rating, and increased premium capture" as shown in the image below.
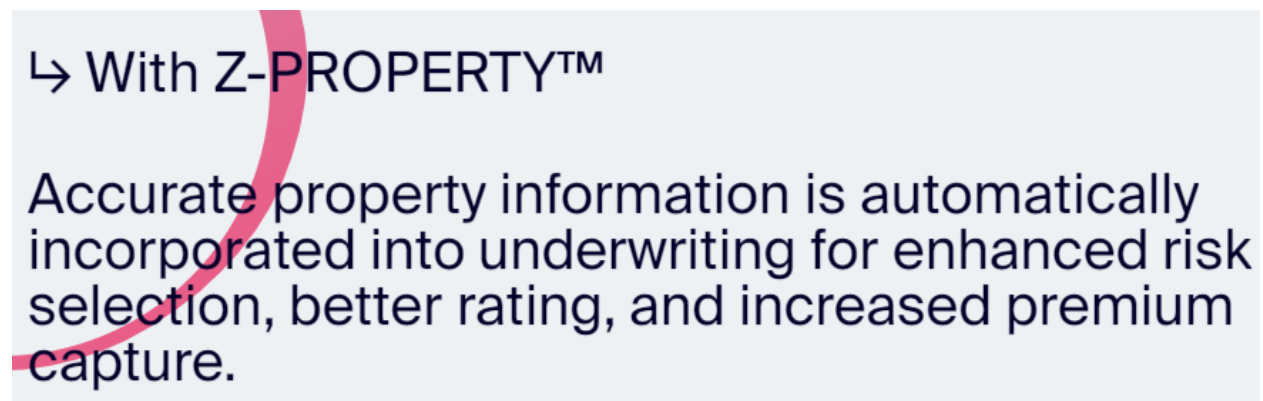
Id. at 2.

53.   Defendant's website represents that "Z-PROPERTY™ Location Insights bring property risk and value intelligence to insurance and real estate through AI and fresh aerial imagery" as shown in the screenshot below.

Id. at 1.

54.   Upon information and belief, Defendant operates Z-PROPERTY by running instructions stored on a non-transitory computer readable medium on processing circuitry. For example, Defendant's website explains that "ZestyAI uses artificial intelligence to account for all factors that may impact a property's value and its risk exposure to natural disasters" as shown in the screenshot below.


Id. at 3.

55.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by processing circuitry, cause the processing circuitry to receive, from a user at a remote computing device, a property condition classification request, wherein the property classification request includes identification of a property and at least one property characteristic. For example, Defendant receives a request from a user interested in learning more about the insurability of a piece of property from a remote location. Defendant's website explains that "Z-VIEW™ gives Z-PROPERTY™ users the ability to quickly access property insights for any address or portfolio" as shown in the screenshot below. *Id.* at 5. Upon information and belief, Z-PROPERTY allows a user to search for portfolios of properties with certain characteristics (e.g., roofs of a certain type, pools, etc.).

25
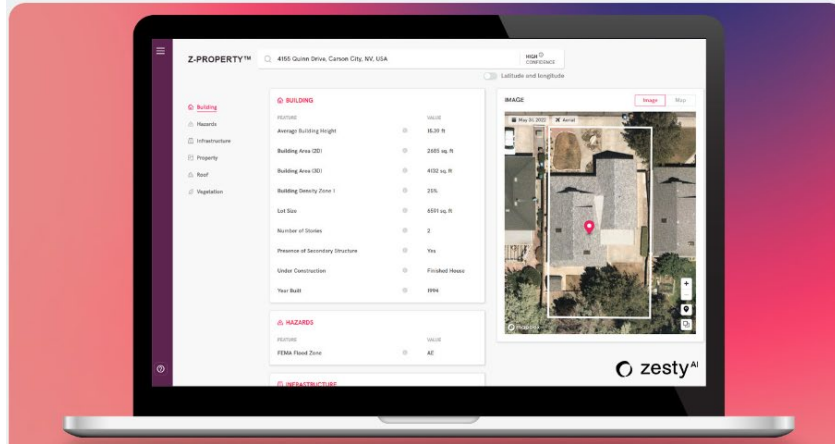
Id. at 5.

56.   Upon information and belief, when Defendant operates Z-PROPERTY, the instructions, when executed by processing circuitry, cause the processing circuitry to obtain, from a remote data source responsive to receiving the property classification request, an aerial image of a geographic region including the property. For example, as shown in the screenshot in Paragraph 55, Defendant's website shows an aerial image of a geographic region including the property corresponding to the received request. Defendant's website also states that "Z-PROPERTY™ covers the entirety of North America with the latest aerial imagery" as shown in the screenshot below.

Unparalleled Fill Rate

Z-PROPERTY™ covers the entirety of North America with the latest aerial imagery.
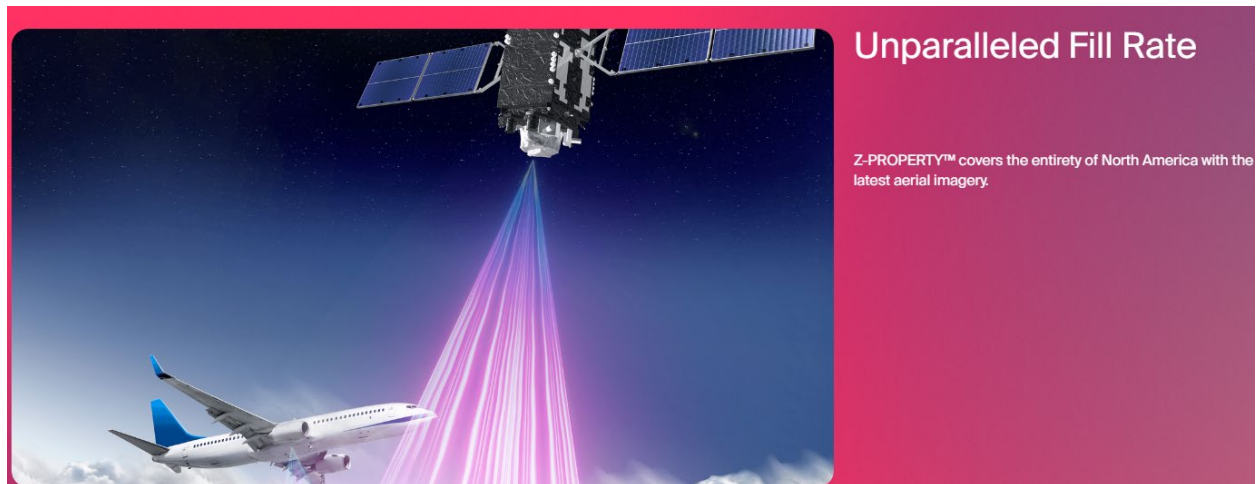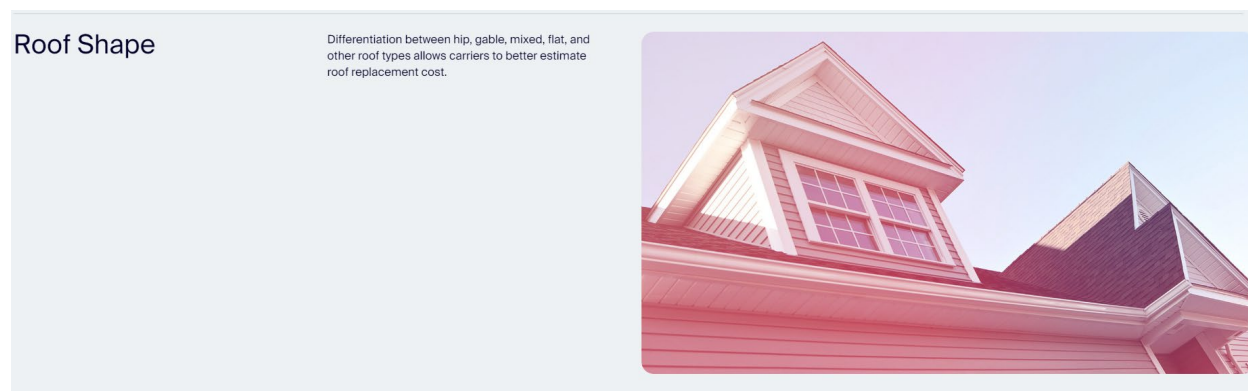
Id. at 4.

57.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by processing circuitry, cause the processing circuitry to extract from one or more of a plurality of features from the aerial image corresponding to each property characteristic of the at least one property characteristic, wherein the extracted features include pixel groupings representing the respective property characteristic. For example, Defendant issued a press release explaining: "Zesty.ai leverages Artificial Intelligence to help the trillion-dollar global property insurance industry better assess risk. We use the latest advancements in computer vision and deep learning on 115+Bn data points on residential and commercial properties to extract key building features to accurately model the potential impact of catastrophic and attritional loss events." Ex. 7 at 2.

58.   Additionally, after the '029 patent issued, Defendant filed U.S. Patent Application No. 17/546,721, now U.S. Patent Publication No. 2022/0180016 A1, which claims priority to two provisional patent applications filed on December 9, 2020 and July 8, 2021. This patent application discusses the use of pixel groupings representing property characteristics.
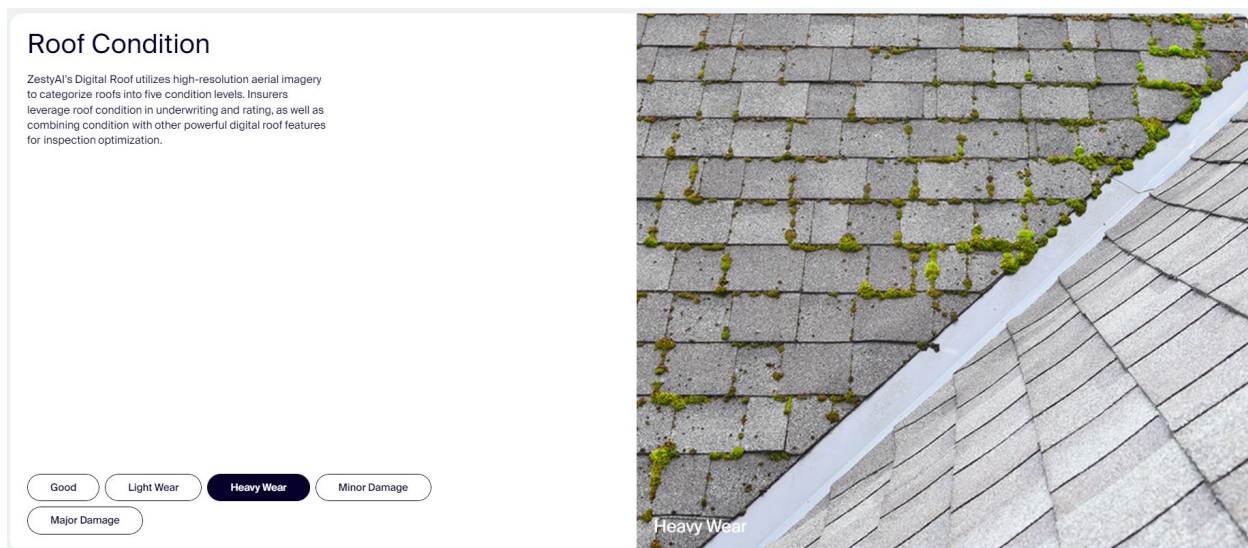
59.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by processing circuitry, cause the processing circuitry to, for each of the at least one property characteristic, determine, from the extracted features for the respective property characteristic, a respective property characteristic classification, wherein determining the respective property characteristic classification includes applying the pixel groupings for the respective property characteristic to a first machine learning classifier trained to identify property characteristics from a set of pixel groupings. For example, Defendant's Digital Roof functionality of Z-PROPERTY includes a machine learning classifier trained to determine a property characteristic classification by identifying the type of roof included in a property (e.g., gable, mixed, flat, etc.). Defendant's website explains that "[d]ifferentiation between hip, gable, mixed, flat, and other roof types allows carriers to better estimate roof replacement cost" as shown in the screenshot below.

Ex. 6 at 8.

60.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by processing circuitry, cause the processing circuitry to determine, based on the respective identified property characteristic and the respective extracted features, a

respective condition classification for the respective property characteristic, wherein identifying the respective condition classification includes applying the respective pixel groupings for the respective property characteristic to a second machine learning classifier trained to identify property characteristic conditions from a set of pixel groupings. For example, Defendant's Digital Roof functionality of Z-PROPERTY includes a machine learning classifier trained to identify the condition of a rooftop. Defendant's website explains that "ZestyAI's Digital Roof utilizes high-resolution aerial imagery to categorize roofs into five condition levels" as shown in the screenshot below.

Id. at 6.

61.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by processing circuitry, cause the processing circuitry to determine, in real-time responsive to receiving the property classification request and using the property characteristic classification of each property characteristic and the condition classification of each property characteristic, at least one risk estimate representing risk of damage due to disaster. For

example, Defendant's Z-HAIL feature of Z-PROPERTY includes a graphical user interface through Z-VIEW that provides a user with a condition assessment of, for example, a roof, and a claim frequency and claim severity score that represent a risk estimate of damage to the property from hail as shown in the screenshot below from Defendant's website.
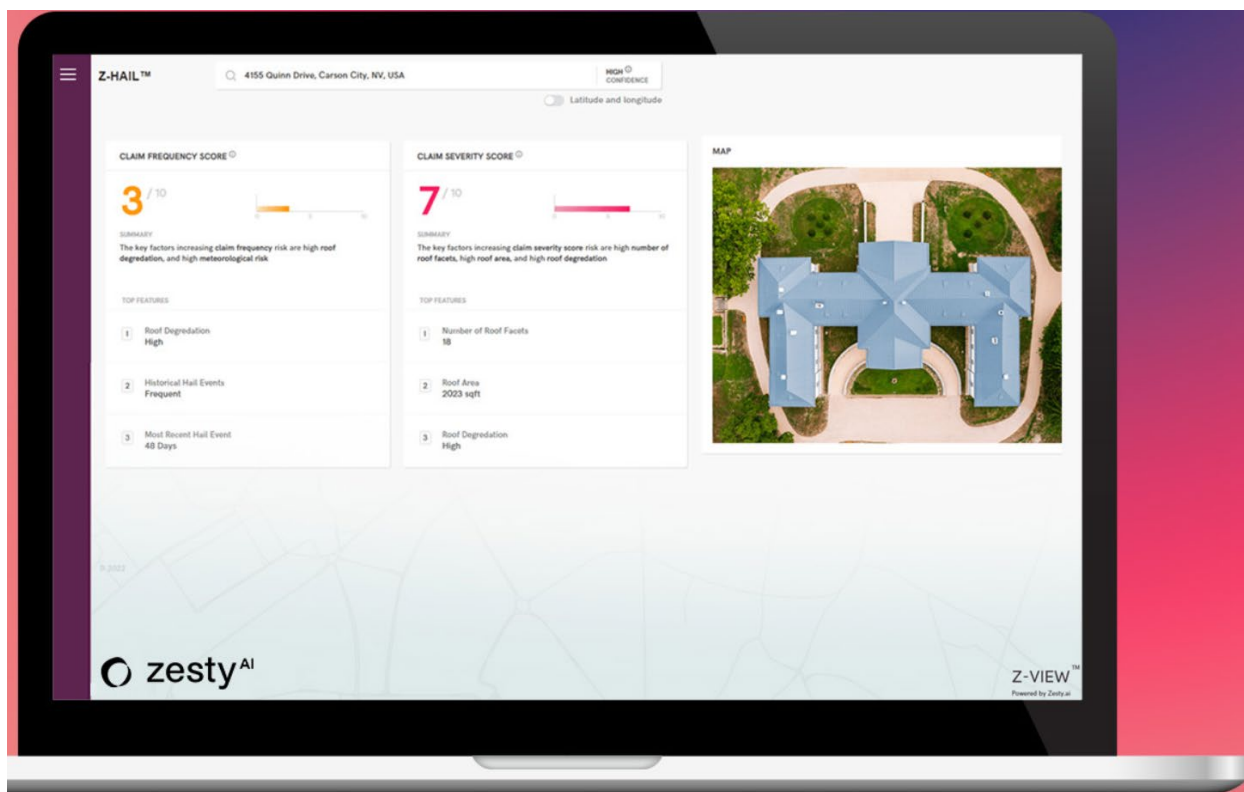
Id. at 9.

62.   Upon information and belief, Defendant's infringement of the '029 patent has been and continues to be willful. Defendant was placed on formal notice of its infringement of the patents-in-suit no later than April 20, 2023, when it received a notice letter from Aon. *See* Ex. 8.

63.   Defendant has caused Plaintiff damage by direct infringement of the claims of the '029 patent.

64.   In accordance with 35 U.S.C. § 287, Defendant has had actual notice and knowledge of the '029 patent since at least April 20, 2023, and no later than the filing of this Complaint.

65.   On information and belief, Defendant continues, without license, to make, use, import, market, offer for sale, and/or sell in the United States services or products that infringe the '029 patent.

66.   Defendant has directly infringed and continues to directly infringe the '029 patent by engaging in acts constituting infringement under 35 U.S.C. § 271(a), including but not necessarily limited to one or more of making, using, selling and offering to sell in this District its Z-PROPERTY product, which is also referred to as "Location Insights" on Defendant's website (https://zesty.ai/products/location-insights), and includes "Digital Roof," "Roof Age," "Z-VIEW," "Z-STORM," "Z-FIRE," "Z-WIND," and "Z-HAIL." *See*, *e.g.*, Ex. 6 at 39-48.

67.   Defendant's infringement of the '029 patent has injured Aon in its business and property rights. Aon is entitled to recover monetary damages for the injuries arising from Defendant's infringement in an amount to be determined at trial.

68.   Defendant's infringement of the '029 patent has caused irreparable harm to Aon and will continue to cause such harm unless and until Defendant's infringing activities are enjoined by this Court.

69.   Defendant continues to commit acts of infringement despite a high likelihood that its actions constitute infringement, and Defendant knew or should have known that its actions constituted an unjustifiably high risk of infringement of the '029 patent. Defendant's continuing infringement of the '029 patent after the filing of this Complaint is particularly egregious.

70.   Defendant's infringement of the '029 patent is exceptional and entitles Aon to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

71.   The full extent of Defendant's infringement is not presently known to Aon. Aon makes this preliminary identification of infringing products and/or services and infringed claims in Count One without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

COUNT TWO

INDIRECT INFRINGEMENT OF U.S. PATENT NO. 10,529,029

72.   Aon incorporates by reference the allegations in paragraphs 1-71 as if fully set forth herein.

73.   Aon has accused Defendant of directly infringing at least claim 15 of the '029 patent by making, using, offering to sell, selling, and/or importing a commercial offering marketed as "Z-PROPERTY."

74.   On information and belief, Zesty, with knowledge of the '029 patent, and without authority, has actively induced and continues to actively induce infringement by end-users of at least one claim of the '029 patent, under 35 U.S.C. § 271(b), by intentionally inducing the use, importation, offer for sale, and/or sale of its Z-PROPERTY products, intending to encourage, and in fact encouraging, end-users to directly infringe the '029 patent.

75.   On information and belief, Zesty actively induced infringement by, *inter alia*, introducing into the stream of commerce the Z-PROPERTY products, and by publishing promotional literature describing and instructing in the operation of the accused systems in an infringing manner and by offering support and technical assistance to its customers that encourages

use of the accused products in ways that infringe the asserted claims. In addition to the statements mentioned *supra* in this Complaint, on its website Zesty advertises that "Z-VIEW™ gives Z-PROPERTY™ users the ability to quickly access property insights for any address or portfolio," and promises that "With Z-PROPERTY™ Accurate property information is automatically incorporated into underwriting for enhanced risk selection, better rating, and increased premium capture." *See, e.g.*, Ex. 6 at 5, 2. Zesty also encourages customers to use its infringing products in an infringing manner through its meetings and partnerships with customers, its publication of numerous "Case Studies" and "Stories From Our Customers & Partners" who are described as using "ZestyAI's Z-FIRE," "Z-HAIL," and "Z-WIND" systems, and by promising to "deliver 10X on every dollar that our customers invest." *See*, *e.g.*, *id.* at 20-35, 12.

76.   In addition, Zesty has had actual knowledge of end users' direct infringement and that Zesty's acts induced such infringement since at least April 20, 2023, and no later than the filing of this Complaint. *See* Ex. 8.

77.   The full extent of Defendant's infringement is not presently known to Aon. Aon makes this preliminary identification of infringing products and infringing claims in Count Two without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

COUNT THREE

DIRECT INFRINGEMENT OF U.S. PATENT NO. 10,650,285

78.   Aon incorporates by reference the allegations in paragraphs 1-77 as if fully set forth herein.

79.   On information and belief, Defendant has infringed claims of the '285 patent, including at least claims 1-4, 6-10, 13, 15, 16, 17, 19, and 21 in violation of 35 U.S.C. § 271(a) by making, using, offering to sell, selling, and/or importing infringing methods and products.

80.   For example, claim 9 of the '285 patent (Ex. 2) recites:

9. A system for automatically categorizing a condition of a property feature of a property, the system comprising:

   a non-transitory computer readable storage region storing

         a first machine learning analysis model trained to identify one or more property characteristics, and

         a second machine learning analysis model trained to identify one or more property conditions;

   processing circuitry; and

   a non-transitory computer readable medium having instructions stored thereon;

   wherein the instructions, when executed by the processing circuitry, cause the processing circuitry to

   extract a set of image-related features from an aerial image, wherein the set of image-related features represent the property feature;

   apply a first portion of the set of image-related features to the first machine learning analysis model to determine a characteristic classification of the property feature from a plurality of potential characteristic classifications of the property feature; and

   apply a second portion of the image-related features to the second machine learning analysis model to determine a condition classification of the property feature from a plurality of potential condition classifications of the property feature, wherein

         the second machine learning analysis model is trained to identify, from the second portion of the set of image-related features, property characteristic conditions of the property feature having the characteristic classification.

81.   On information and belief, Defendant has directly infringed at least claim 9 of the '285 patent by making, using, offering to sell, selling, and/or importing a commercial offering

marketed as "Z-PROPERTY," which is also referred to as "Location Insights" on Defendant's website (https://zesty.ai/products/location-insights), and includes "Digital Roof," "Roof Age," "Z-VIEW," "Z-STORM," "Z-FIRE," "Z-WIND," and "Z-HAIL." *See*, *e.g.*, Ex. 6 at 39-48.

82.   According to Defendant's website, Z-PROPERTY allows "[a]ccurate property information [to be] automatically incorporated into underwriting for enhanced risk selection, better rating, and increased premium capture" as shown in the image below.
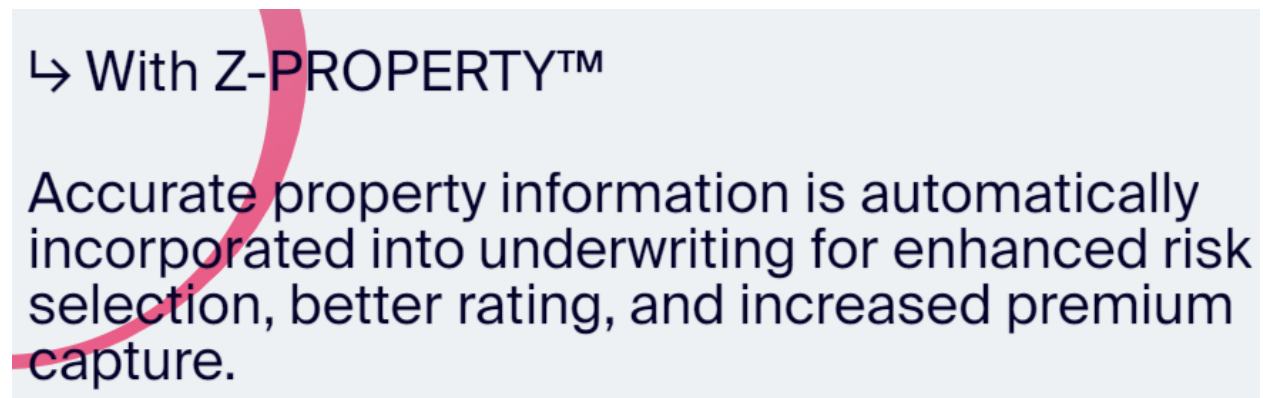
Id. at 2.

83.   Defendant's website represents that "Z-PROPERTY^{TM} Location Insights bring property risk and value intelligence to insurance and real estate through AI and fresh aerial imagery."
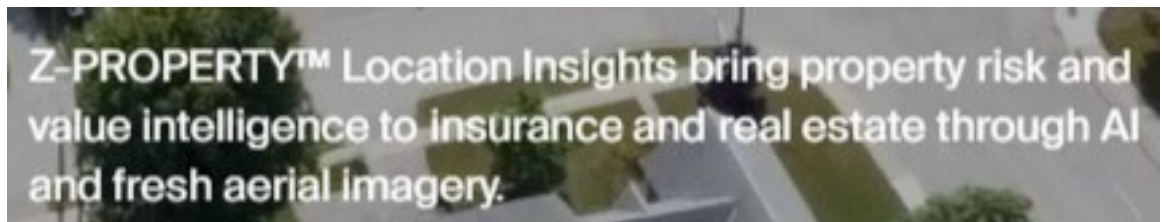
Id. at 1.

84.   Upon information and belief, when Defendant operates Z-PROPERTY, Defendant automatically categorizes a condition of a property feature of a property, as set forth more fully below.

35

85.   Upon information and belief, Z-PROPERTY comprises a non-transitory computer readable storage region storing a first machine learning analysis model trained to identify one or more property characteristics.   For example, Defendant's Digital Roof functionality of Z-PROPERTY includes a first machine learning analysis model trained to determine a property characteristic.   Upon information and belief, Z-PROPERTY allows a user to search for portfolios of properties with certain characteristics (e.g., roofs of a certain type, pools, etc.).


Id. at 5.

86.   Upon information and belief, Z-PROPERTY comprises a non-transitory computer readable storage region storing a second machine learning analysis model trained to identify one or more property conditions.   For example, Defendant's Digital Roof functionality of Z-PROPERTY includes a machine learning analysis model trained to identify the condition of a rooftop.   Defendant's website explains that "ZestyAI's Digital Roof utilizes high-resolution aerial imagery to categorize roofs into five condition levels" as shown in the screenshot below.
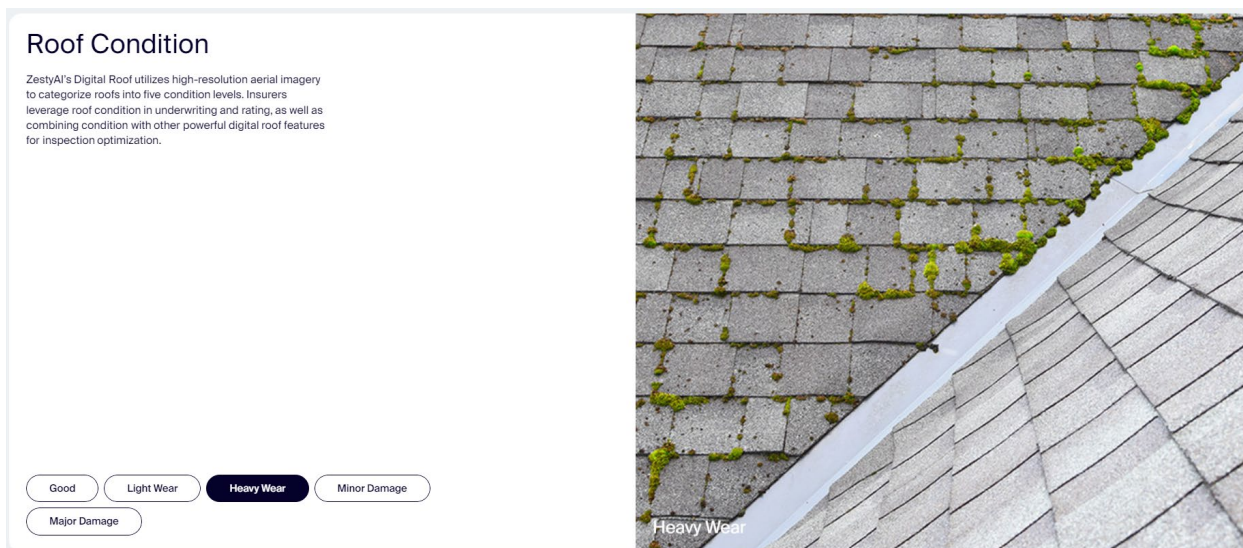
Id. at 6.

87.   Upon information and belief, Defendant operates Z-PROPERTY by running it on processing circuitry. For example, Defendant's website explains that "ZestyAI uses artificial intelligence to account for all factors that may impact a property's value and its risk exposure to natural disasters" as shown in the screenshot below.

Id. at 3.

88.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the

instructions, when executed by the processing circuitry, cause the processing circuitry to extract a set of image-related features from an aerial image, wherein the set of image-related features represent the property feature. For example, Defendant issued a press release explaining: "Zesty.ai leverages Artificial Intelligence to help the trillion-dollar global property insurance industry better assess risk. We use the latest advancements in computer vision and deep learning on 115+Bn data points on residential and commercial properties to extract key building features to accurately model the potential impact of catastrophic and attritional loss events." Ex. 7 at 2. Additionally, after the '285 patent issued, Defendant filed U.S. Patent Application No. 17/546,721, now U.S. Patent Publication No. 2022/0180016 A1, which discusses use of pixel groupings representing property characteristics.

89.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by the processing circuitry, cause the processing circuitry to apply a first portion of the set of image-related features to the first machine learning analysis model to determine a characteristic classification of the property feature from a plurality of potential characteristic classifications of the property feature. For example, Defendant's Digital Roof functionality of Z-PROPERTY includes a machine learning analysis model trained to determine a property characteristic classification by identifying the type of roof included in a property (e.g., gable, mixed, flat, etc.). Defendant's website explains that "[d]ifferentiation between hip, gable, mixed, flat, and other roof types allows carriers to better estimate roof replacement cost" as shown in the screenshot below.

Ex. 6 at 8.

90.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by the processing circuitry, cause the processing circuitry to apply a second portion of the image-related features to the second machine learning analysis model to determine a condition classification of the property feature from a plurality of potential condition classifications of the property feature, wherein the second machine learning analysis model is trained to identify, from the second portion of the set of image-related features, property characteristic conditions of the property feature having the characteristic classification.   For example, Defendant's Digital Roof functionality of Z-PROPERTY includes a machine learning analysis model trained to identify the condition of a rooftop.   Defendant's website explains that "ZestyAI's Digital Roof utilizes high-resolution aerial imagery to categorize roofs into five condition levels" as shown in the screenshot below.
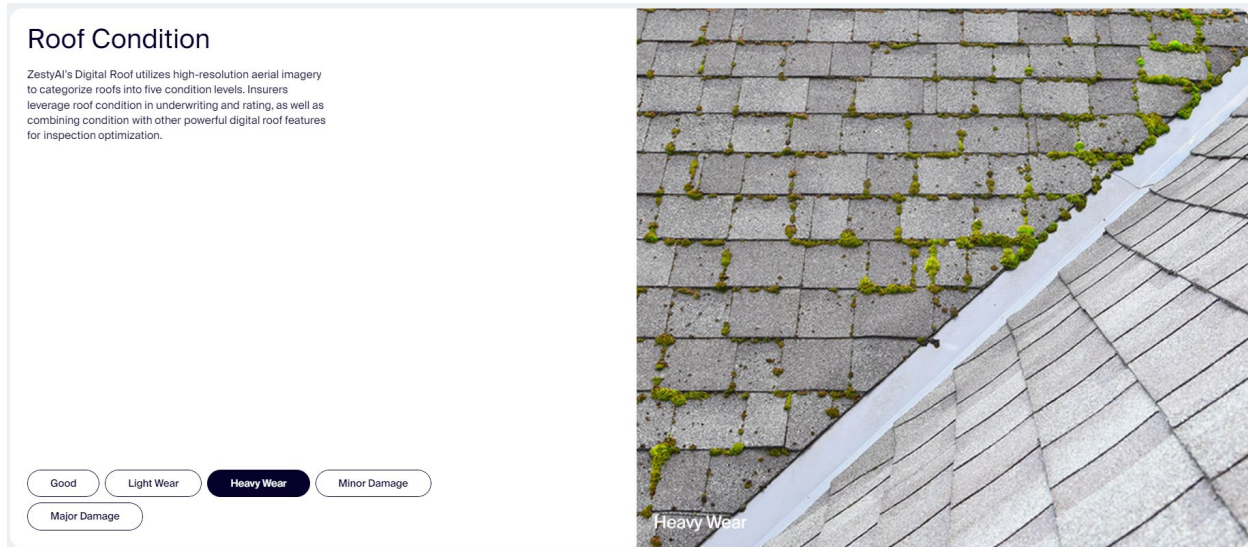
Id. at 6.

91.   Upon information and belief, Defendant's infringement of the '285 patent has been and continues to be willful. Defendant was placed on formal notice of its infringement of the patents-in-suit no later than April 20, 2023, when it received a notice letter from Aon. Ex. 8 at 1.

92.   Defendant has caused Plaintiff damage by direct infringement of the claims of the '285 patent.

93.   In accordance with 35 U.S.C. § 287, Defendant has had actual notice and knowledge of the '285 patent since at least April 20, 2023, and no later than the filing of this Complaint.

94.   On information and belief, Defendant continues, without license, to make, use, import, market, offer for sale, and/or sell in the United States services or products that infringe the '285 patent.

95.   Defendant has directly infringed and continues to directly infringe the '285 patent by engaging in acts constituting infringement under 35 U.S.C. § 271(a), including but not necessarily limited to one or more of making, using, selling and offering to sell, in this District its Z-PROPERTY product, which is also referred to as "Location Insights" on Defendant's website

(https://zesty.ai/products/location-insights), and includes "Digital Roof," "Roof Age," "Z-VIEW,"

"Z-STORM," "Z-FIRE," "Z-WIND," and "Z-HAIL." *See*, *e.g.*, Ex. 6 at 39-48.

96.   Defendant's infringement of the '285 patent has injured Aon in its business and

property rights.   Aon is entitled to recover monetary damages for the injuries arising from

Defendant's infringement in an amount to be determined at trial.

97.   Defendant's infringement of the '285 patent has caused irreparable harm to Aon

and will continue to cause such harm unless and until Defendant's infringing activities are enjoined

by this Court.

98.   Defendant continues to commit acts of infringement despite a high likelihood that

its actions constitute infringement, and Defendant knew or should have known that its actions

constituted an unjustifiably high risk of infringement of the '285 patent.   Defendant's continuing

infringement of the '285 patent after the filing of this Complaint is particularly egregious.

99.   Defendant's infringement of the '285 patent is exceptional and entitles Aon to

attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

100.   The full extent of Defendant's infringement is not presently known to Aon.   Aon

makes this preliminary identification of infringing products and infringing claims in Count Three

without the benefit of discovery or claim construction in this action, and expressly reserves the

right to augment, supplement, and revise its identifications based on additional information

obtained through discovery or otherwise.

COUNT FOUR

INDIRECT INFRINGEMENT OF U.S. PATENT NO. 10,650,285

101.   Aon incorporates by reference the allegations in paragraphs 1-100 as if fully set forth herein.

102.   Aon has accused Defendant of directly infringing at least claim 9 of the '285 patent by making, using, offering to sell, selling, and/or importing a commercial offering marketed as "Z-PROPERTY."

103.   On information and belief, Zesty, with knowledge of the '285 patent, and without authority, has actively induced and continues to actively induce infringement by end-users of at least one claim of the '285 patent, under 35 U.S.C. § 271(b), by intentionally inducing the use, importation, offer for sale, and/or sale of its Z-PROPERTY products, intending to encourage, and in fact encouraging, end-users to directly infringe the '285 patent.

104.   On information and belief, Zesty actively induced infringement by, *inter alia*, introducing into the stream of commerce the Z-PROPERTY products, and by publishing promotional literature describing and instructing in the operation of the accused systems in an infringing manner and by offering support and technical assistance to its customers that encourage use of the accused products in ways that infringe the asserted claims. In addition to the statements mentioned *supra* in this Complaint, on its website Zesty advertises that "Z-VIEW™ gives Z-PROPERTY™ users the ability to quickly access property insights for any address or portfolio," and promises that "With Z-PROPERTY™ Accurate property information is automatically incorporated into underwriting for enhanced risk selection, better rating, and increased premium capture." *See, e.g.*, Ex. 6 at 5, 2. Zesty also encourages customers to use its infringing products in an infringing manner through its meetings and partnerships with customers, its publication of

numerous "Case Studies" and "Stories From Our Customers & Partners" who are described as using "ZestyAI's Z-FIRE," "Z-HAIL," and "Z-WIND" systems, and by promising to "deliver 10X on every dollar that our customers invest." *See*, *e.g.*, *id.* at 20-35, 12.

105.   In addition, Zesty has had actual knowledge of end users' direct infringement and that Zesty's acts induced such infringement since at least April 20, 2023, and no later than the filing of this Complaint. *See* Ex. 8.

106.   The full extent of Defendant's infringement is not presently known to Aon. Aon makes this preliminary identification of infringing products and infringing claims in Count Four without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

<u>**COUNT FIVE**</u>

<u>**DIRECT INFRINGEMENT OF U.S. PATENT NO. 11,030,491**</u>

107.   Aon incorporates by reference the allegations in paragraphs 1-106 as if fully set forth herein.

108.   On information and belief, Defendant has infringed claims of the '491 patent, including at least claims 1-3, 6, 8, 10-13, and 17-20 in violation of 35 U.S.C. § 271(a) by making, using, offering to sell, selling, and/or importing infringing products.

109.   For example, claim 1 of the '491 patent (Ex. 3) recites:

1. A system for automatically assessing features of a property location comprising a structure, the system comprising:

> processing circuitry; and

> a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by the processing circuitry, cause the processing circuitry to

access a plurality of images of the property location including the structure,

apply boundary information to one or more images of the plurality of images to isolate the property location or the structure thereon within each respective image, and

classify a condition of one or more property features of the property location, wherein classifying comprises, for each feature of the one or more features,

> extracting the respective feature from each image of at least one image of the one or more images,

> applying a set of machine learning analysis algorithms to at least a portion of each image of the at least one image to determine a set of characteristics of the respective property feature, wherein

>> each algorithm of the first set of machine learning analysis algorithms is trained to identify one or more characteristics of the set of characteristics, and

> applying another machine learning analysis algorithm to at least a portion of each image of the at least one image to classify a condition of the respective property feature, wherein

>> the condition is classified as a respective classification of a set of possible classifications, and

>> the another machine learning analysis algorithm is trained to identify one or more conditions of property locations and/or structures thereon having the set of characteristics of the respective property feature.

110.   On information and belief, Defendant has directly infringed at least claim 1 of the '491 patent by making, using, offering to sell, selling, and/or importing a commercial offering marketed as "Z-PROPERTY," which is also referred to as "Location Insights" on Defendant's website (https://zesty.ai/products/location-insights), and includes "Digital Roof," "Roof Age," "Z-VIEW," "Z-STORM," "Z-FIRE," "Z-WIND," and "Z-HAIL." *See*, *e.g.*, Ex. 6 at 39-48.

111.   Upon information and belief, when Defendant operates Z-PROPERTY, Defendant automatically assesses features of a property location comprising a structure. For example, the

Digital Roof feature of Z-PROPERTY utilizes high-resolution aerial imagery to categorize roofs into five condition levels" as shown in the screenshot below.
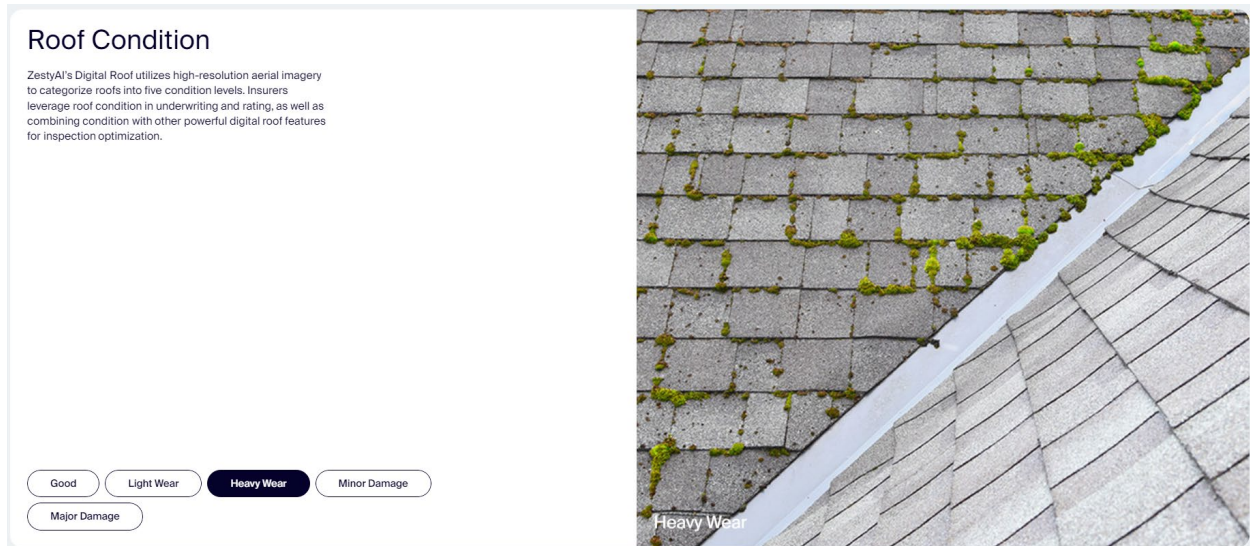
Id. at 6.

112.   Upon information and belief, Defendant operates Z-PROPERTY by running it on processing circuitry. For example, Defendant's website explains that "ZestyAI uses artificial intelligence to account for all factors that may impact a property's value and its risk exposure to natural disasters" as shown in the screenshot below.


Id. at 3.

113.   Upon information and belief, Defendant operates Z-PROPERTY by running it on a non-transitory computer-readable medium having instructions stored thereon, wherein the instructions, when executed by the processing circuitry, cause the processing circuitry to access a plurality of images of the property location including the structure. For example, Defendant issued a press release explaining: "Zesty.ai leverages Artificial Intelligence to help the trillion-dollar global property insurance industry better assess risk. We use the latest advancements in computer vision and deep learning on 115+Bn data points on residential and commercial properties to extract key building features to accurately model the potential impact of catastrophic and attritional loss events." Ex. 7 at 2. Additionally, Z-PROPERTY includes change detection in which a plurality of images of a property, captured at different times, are analyzed. Ex. 9 at 2-3.

114.   Upon information and belief, when Defendant operates Z-PROPERTY, the instructions, when executed by the processing circuitry, cause the processing circuitry to apply boundary information to one or more images of the plurality of images to isolate the property location or the structure thereon within each respective image. For example, Zesty's founder and CEO was quoted during a podcast as explaining: "So we have providers that provide us [parcel] data information[.] [S]o you give us an address, let's say your home address, we can match that to a geocode, and we can match that to a building parcel with 98 plus percent accuracy[.] [A]nd once we know[,] once we know the parcel – basically outline a parcel around your property – then we can use those models that I mentioned[,] image recognition models[,] to pick up what's on that [parcel.]" *See* Ex. 10 at 9 at 18:28-18:54 (https://www.youtube.com/watch?v=24Wwa6vOfLQ).

115.   Upon information and belief, when Defendant operates Z-PROPERTY, the instructions, when executed by the processing circuitry, cause the processing circuitry to classify a condition of one or more property features of the property location wherein classifying
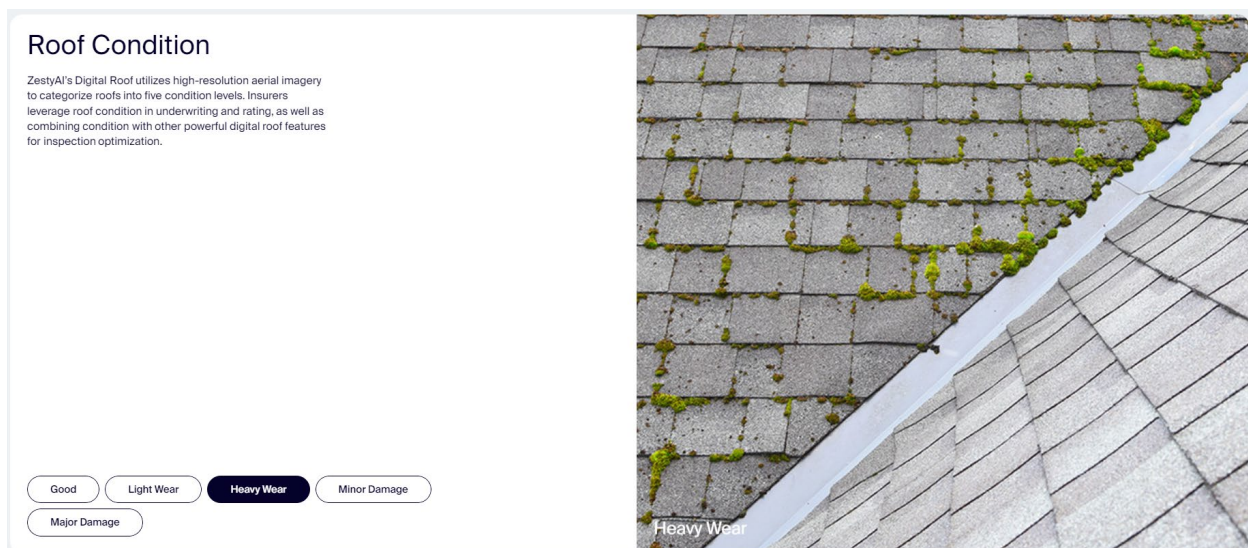
comprises, for each feature of the one or more features, extracting the respective feature from each image of at least one image of the one or more images. For example, Zesty's founder and CEO was quoted during a podcast as explaining: "[A]nd once we know[,] once we know the parcel – basically outline a parcel around your property – then we can use those models that I mentioned[,] image recognition models[,] to pick up what's on that [parcel.] [I]s that a main structure[, is there a] secondary structure[,] is there a gable roof[,] is there a hip roof[.] [I]s there a pool on the structure, is that vegetation[.] So[,] that's when we start running our crawlers[,] or image recognition models[,] and basically we extract all that property-specific risk and value data that is associated with your geocode." *Id.* at 9 at 18:40-19:20.

116. Upon information and belief, when Defendant operates Z-PROPERTY, Defendant applies a set of machine learning analysis algorithms to at least a portion of each image of the at least one image to determine a set of characteristics of the respective property feature. For example, Defendant's Digital Roof functionality of Z-PROPERTY includes a machine learning classifier trained to determine a property characteristic classification by identifying the type of roof included in a property (e.g., gable, mixed, flat, etc.). Defendant's website explains that "[d]ifferentiation between hip, gable, mixed, flat, and other roof types allows carriers to better estimate roof replacement cost" as shown in the screenshot below.
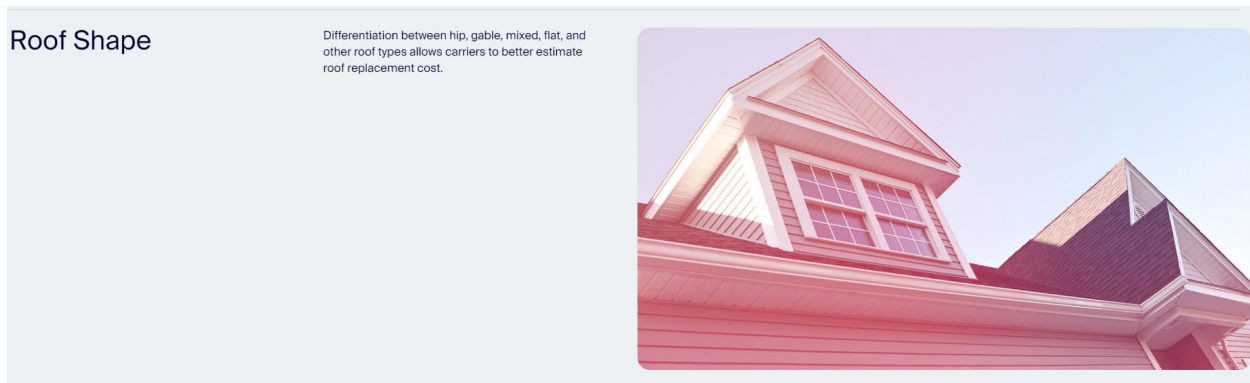
Ex. 6 at 8.

117. Upon information and belief, when Defendant operates Z-PROPERTY, Defendant applies another machine learning analysis algorithm to at least a portion of each image of the at least one image to classify a condition of the respective property feature, wherein the condition is classified as a respective classification of a set of possible classifications, and the another machine learning analysis algorithm is trained to identify one or more conditions of property locations and/or structures thereon having the set of characteristics of the respective property feature. For example, Defendant's Digital Roof functionality of Z-PROPERTY includes a machine learning classifier trained to identify the condition of a rooftop. Defendant's website explains that "ZestyAI's Digital Roof utilizes high-resolution aerial imagery to categorize roofs into five condition levels" as shown in the screenshot below.

Id. at 6.

118. Upon information and belief, Defendant's infringement of the '491 patent has been and continues to be willful. Defendant was placed on formal notice of its infringement of the patents-in-suit no later than April 20, 2023, when it received a notice letter from Aon. *See* Ex. 8 at 1.

119.   Defendant has caused Plaintiff damage by direct infringement of the claims of the '491 patent.

120.   In accordance with 35 U.S.C. § 287, Defendant has had actual notice and knowledge of the '491 patent since at least April 20, 2023, and no later than the filing of this Complaint.

121.   On information and belief, Defendant continues, without license, to make, use, import, market, offer for sale, and/or sell in the United States services or products that infringe the '491 patent.

122.   Defendant has directly infringed and continues to directly infringe the '491 patent by engaging in acts constituting infringement under 35 U.S.C. § 271(a), including but not necessarily limited to one or more of making, using, selling and offering to sell, in this District its Z-PROPERTY product, which is also referred to as "Location Insights" on Defendant's website (https://zesty.ai/products/location-insights), and includes "Digital Roof," "Roof Age," "Z-VIEW," "Z-STORM," "Z-FIRE," "Z-WIND," and "Z-HAIL." *See*, *e.g.*, Ex 6 at 39-48.

123.   Defendant's infringement of the '491 patent has injured Aon in its business and property rights. Aon is entitled to recover monetary damages for the injuries arising from Defendant's infringement in an amount to be determined at trial.

124.   Defendant's infringement of the '491 patent has caused irreparable harm to Aon and will continue to cause such harm unless and until Defendant's infringing activities are enjoined by this Court.

125.   Defendant continues to commit acts of infringement despite a high likelihood that its actions constitute infringement, and Defendant knew or should have known that its actions

49

constituted an unjustifiably high risk of infringement of the '491 patent. Defendant's continuing infringement of the '491 patent after the filing of this Complaint is particularly egregious.

126.   Defendant's infringement of the '491 patent is exceptional and entitles Aon to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

127.   The full extent of Defendant's infringement is not presently known to Aon. Aon makes this preliminary identification of infringing products and infringing claims in Count Five without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

COUNT SIX

INDIRECT INFRINGEMENT OF U.S. PATENT NO. 11,030,491

128.   Aon incorporates by reference the allegations in paragraphs 1-127 as if fully set forth herein.

129.   Aon has accused Defendant of directly infringing at least claim 1 of the '491 patent by making, using, offering to sell, selling, and/or importing a commercial offering marketed as "Z-PROPERTY."

130.   On information and belief, Zesty, with knowledge of the '491 patent, and without authority, has actively induced and continues to actively induce infringement by end-users of at least one claim of the '491 patent, under 35 U.S.C. § 271(b), by intentionally inducing the use, importation, offer for sale, and/or sale of its Z-PROPERTY products, intending to encourage, and in fact encouraging, end-users to directly infringe the '491 patent.

131.   On information and belief, Zesty actively induced infringement by, *inter alia*, introducing into the stream of commerce the Z-PROPERTY products, and by publishing

promotional literature describing and instructing in the operation of the accused systems in an infringing manner and by offering support and technical assistance to its customers that encourage use of the accused products in ways that infringe the asserted claims. In addition to the statements mentioned *supra* in this Complaint, on its website Zesty advertises that "Z-VIEW™ gives Z-PROPERTY™ users the ability to quickly access property insights for any address or portfolio," and promises that "With Z-PROPERTY™ Accurate property information is automatically incorporated into underwriting for enhanced risk selection, better rating, and increased premium capture." *See, e.g.*, Ex. 6 at 5, 2. Zesty also encourages customers to use its infringing products in an infringing manner through its meetings and partnerships with customers, its publication of numerous "Case Studies" and "Stories From Our Customers & Partners" who are described as using ZestyAI's "Z-FIRE," "Z-HAIL," and "Z-WIND" systems, and by promising to "deliver 10X on every dollar that our customers invest." *See*, *e.g.*, *id.* at 20-35, 12.

132.   In addition, Zesty has had actual knowledge of end users' direct infringement and that Zesty's acts induced such infringement since at least April 20, 2023, and no later than the filing of this Complaint. *See* Ex. 8.

133.   The full extent of Defendant's infringement is not presently known to Aon. Aon makes this preliminary identification of infringing products and infringing claims in Count Six without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

COUNT SEVEN

DIRECT INFRINGEMENT OF U.S. PATENT NO. 11,195,058

134.   Aon incorporates by reference the allegations in paragraphs 1-133 as if fully set forth herein.

135.   On information and belief, Defendant has infringed claims of the '058 patent, including at least claims 1, 2, 4-7, 10, 11, 13, 15, and 18 in violation of 35 U.S.C. § 271(a) by making, using, offering to sell, selling, and/or importing infringing products.

136.   For example, claim 1 of the '058 patent (Ex. 4) recites:

1. A system for automatically assessing features of a property location comprising a structure, the system comprising:

a non-volatile computer readable medium storing

a set of property characteristic profiles, each property characteristic profile of the set of property characteristic profiles being developed through training one or more machine learning algorithms using first property images to identify one or more characteristics of at least one property feature of one or more property features, and

a set of property condition profiles, each property condition profile of the set of property condition profiles being developed through training one or more machine learning algorithms using second property images to identify one or more conditions of at least one property characteristic of one or more property characteristics corresponding to a given feature or features of the one or more property features; and

processing circuitry configured to

receive, from a user at a remote computing device via a network, a request comprising identification of a property location,

access aerial imagery of the property location,

classify a condition of one or more features of the property location, wherein classifying comprises, for each feature of the one or more features,

52

identifying the respective feature from at least one image obtained from the aerial imagery,

applying one or more property characteristic profiles of the set of property characteristic profiles to at least a portion of each image of the at least one image to determine a plurality of characteristics of the respective feature, wherein
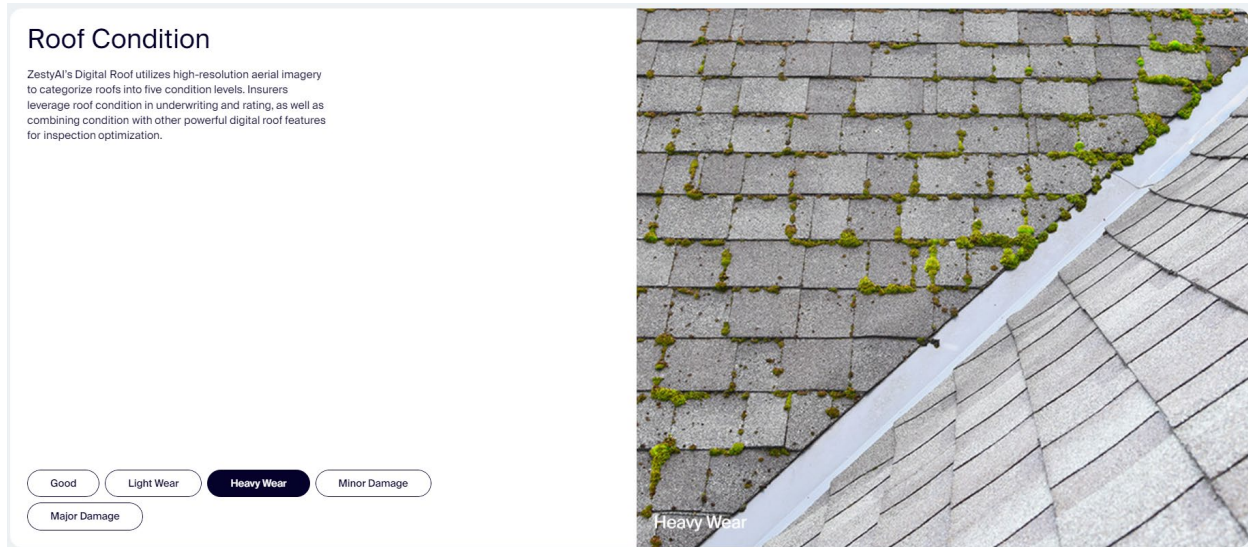
a first characteristic of the plurality of characteristics comprises a type of material of the feature or a shape of the feature, and

applying one or more property condition profiles of the set of property condition profiles to at least a portion of each image of the at least one image to classify a condition of the respective property feature, and

responsive to receiving the request, cause presentation of, for review by the user at the remote computing device, a graphical user interface comprising information regarding the plurality of characteristics and the condition of each feature of the at least one property feature.
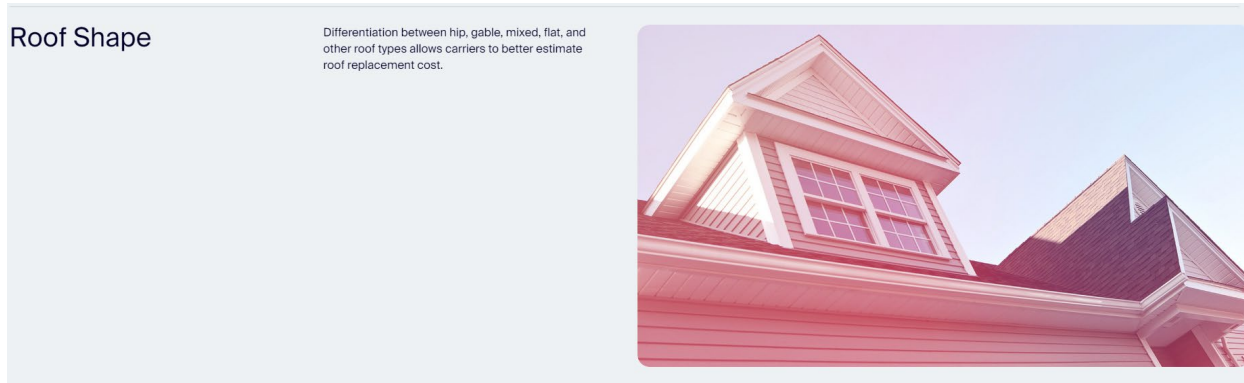
137.   On information and belief, Defendant has directly infringed at least claim 1 of the '058 patent by making, using, offering to sell, selling, and/or importing a commercial offering marketed as "Z-PROPERTY," which is also referred to as "Location Insights" on Defendant's website (https://zesty.ai/products/location-insights), and includes "Digital Roof," "Roof Age," "Z-VIEW," "Z-STORM," "Z-FIRE," "Z-WIND," and "Z-HAIL." *See*, *e.g.*, Ex. 6 at 39-48.

138.   Upon information and belief, when Defendant operates Z-PROPERTY, Defendant assesses features of a property location comprising a structure. For example, the Digital Roof feature of Z-Property "utilizes high-resolution aerial imagery to categorize roofs into five condition levels" as shown in the screenshot below.

Roof Condition

ZestyAI's Digital Roof utilizes high-resolution aerial imagery to categorize roofs into five condition levels. Insurers leverage roof condition in underwriting and rating, as well as combining condition with other powerful digital roof features for inspection optimization.

Good   Light Wear   **Heavy Wear**   Minor Damage

Major Damage

Heavy Wear

Id. at 6.

139.   Upon information and belief, when Defendant operates Z-PROPERTY by running it on a non-volatile computer readable medium storing a set of property characteristic profiles, each property characteristic profile of the set of property characteristic profiles being developed through training one or more machine learning algorithms using first property images to identify one or more characteristics of at least one property feature of one or more property features. For example, the Digital Roof feature of Z-PROPERTY stores a set of property characteristic profiles (e.g., a profile of a gambrel roof, etc.), which was developed through training machine learning models to identify property characteristics. Defendant's website explains that "[d]ifferentiation between hip, gable, mixed, flat, and other roof types allows carriers to better estimate roof replacement cost" as shown in the screenshot below.

| Roof Shape | Differentiation between hip, gable, mixed, flat, and other roof types allows carriers to better estimate roof replacement cost. | |

Id. at 8.

140.   Upon information and belief, when Defendant operates Z-PROPERTY on processing circuitry, the processing circuitry is configured to receive, from a user at a remote computing device via a network, a request comprising identification of a property location. For example, "Z-VIEW™ gives Z-PROPERTY™ users the ability to quickly access property insights for any address or portfolio" as shown in the screenshot below.
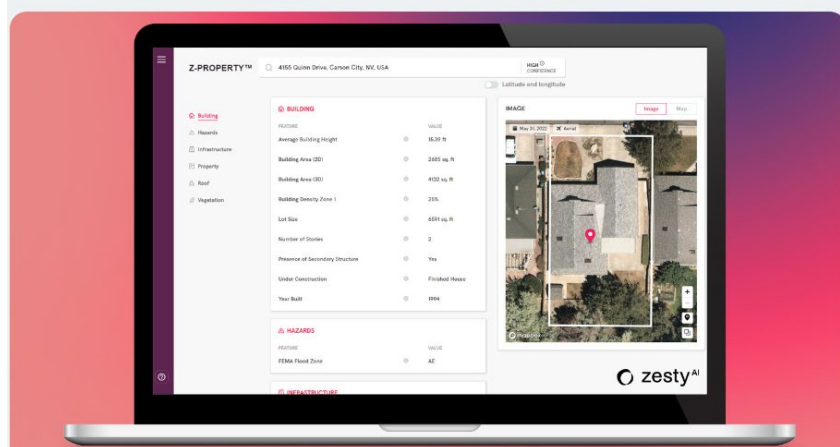

Id. at 5.

141.   Upon information and belief, when Defendant operates Z-PROPERTY, the processing circuitry is configured to access aerial imagery of the property location. For example,

Defendant's website represents that "Z-PROPERTY™ Location Insights bring property risk and value intelligence to insurance and real estate through AI and fresh aerial imagery" as shown in the screenshot below.
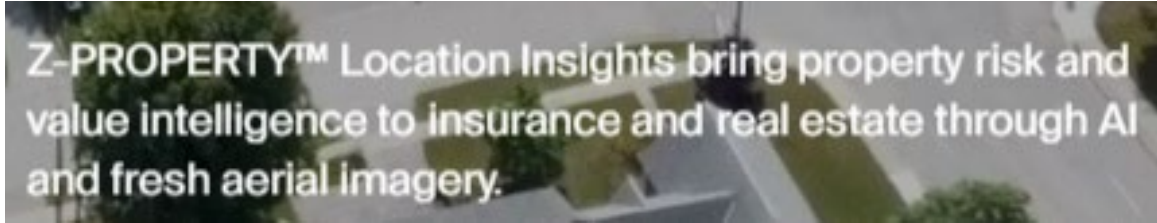

Id. at 1.

142.   Upon information and belief, when Defendant operates Z-PROPERTY, the processing circuitry is configured to classify a condition of one or more features of the property location, wherein classifying comprises, for each feature of the one or more features, identifying the respective feature from at least one image obtained from the aerial imagery. For example, the Digital Roof feature of Z-PROPERTY "utilizes high-resolution aerial imagery to categorize roofs into five condition levels" as shown in the screenshot below.
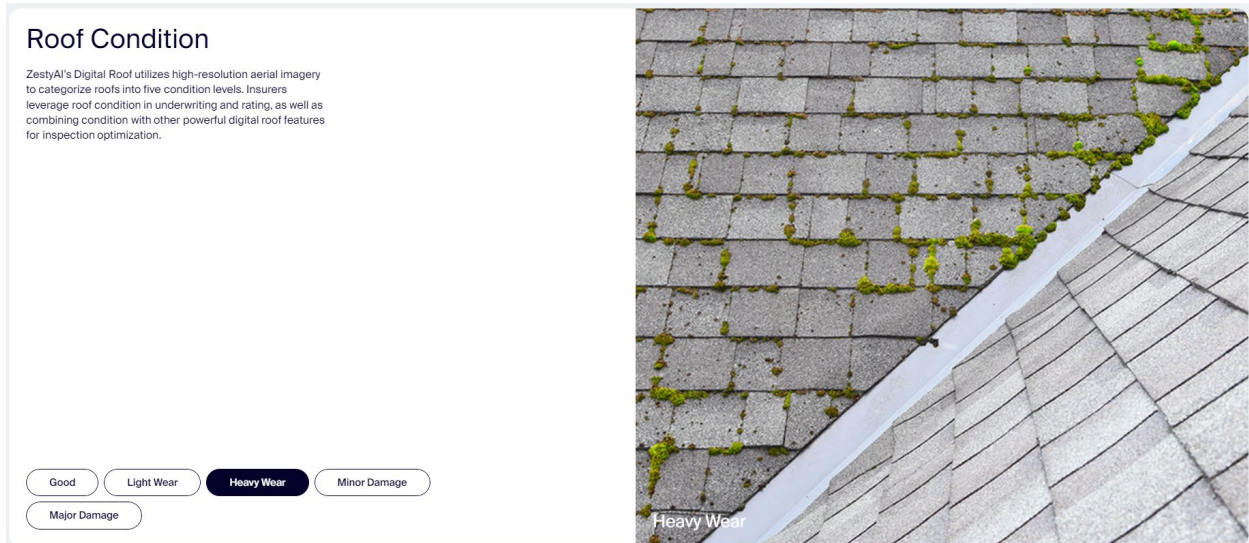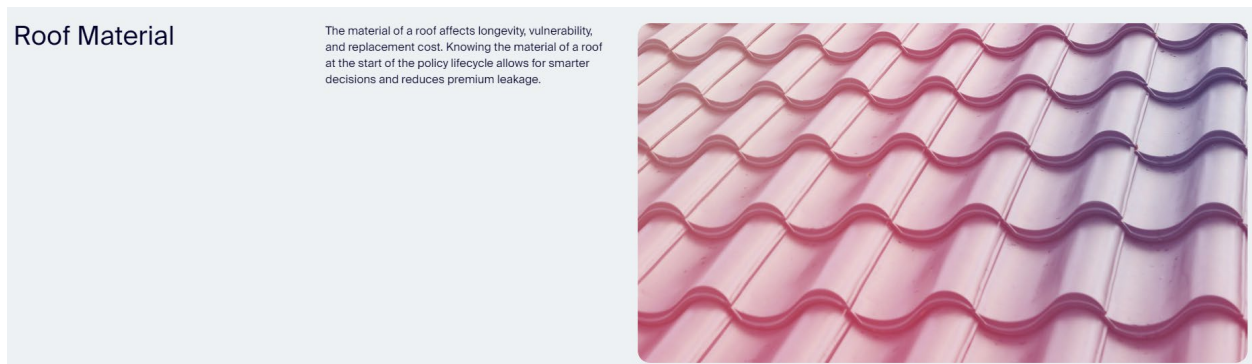

Id. at 6.

143.   Upon information and belief, when Defendant operates Z-PROPERTY, Defendant applies one or more property characteristic profiles of the set of property characteristic profiles to at least a portion of each image of the at least one image to determine a plurality of characteristics of the respective feature. For example, the Digital Roof feature of Z-PROPERTY applies a set of property characteristic profiles (e.g., a profile of a gable roof, etc.) to an image which allows for "[d]ifferentiation between hip, gable, mixed, flat, and other roof types allows carriers to better estimate roof replacement cost" as shown in the screenshot below.


Roof Shape

Differentiation between hip, gable, mixed, flat, and other roof types allows carriers to better estimate roof replacement cost.
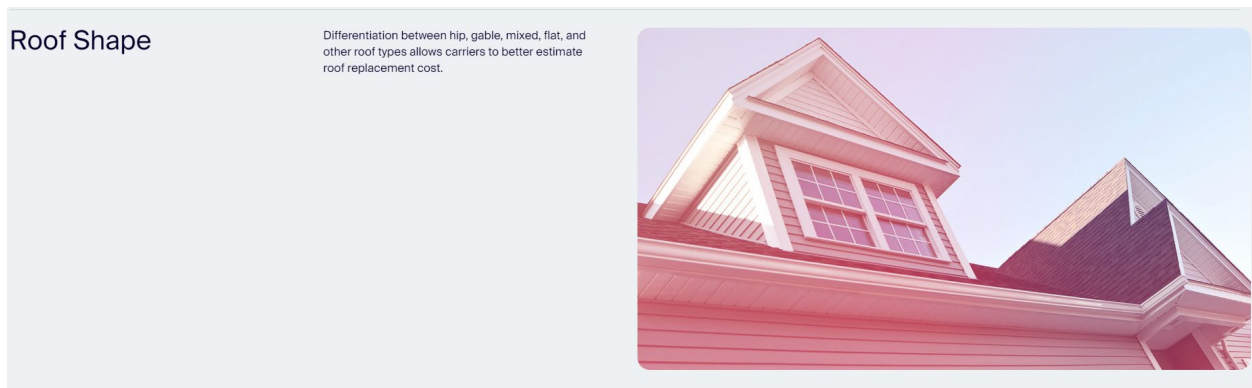
Id. at 8.

144.   Upon information and belief, in Z-PROPERTY, a first characteristic of the plurality of characteristics comprises a type of material of the feature or a shape of the feature. For example, the Digital Roof feature of Z-PROPERTY is able to detect roof material as shown in the screenshot below from Defendant's website.

Roof Material

The material of a roof affects longevity, vulnerability, and replacement cost. Knowing the material of a roof at the start of the policy lifecycle allows for smarter decisions and reduces premium leakage.

Id. at 8.

145.   Upon information and belief, when Defendant operates Z-PROPERTY, Defendant applies one or more property condition profiles of the set of property condition profiles to at least a portion of each image of the at least one image to classify a condition of the respective property feature. For example, the Digital Roof feature of Z-PROPERTY "utilizes high-resolution aerial imagery to categorize roofs into five condition levels" as shown in the screenshot below.
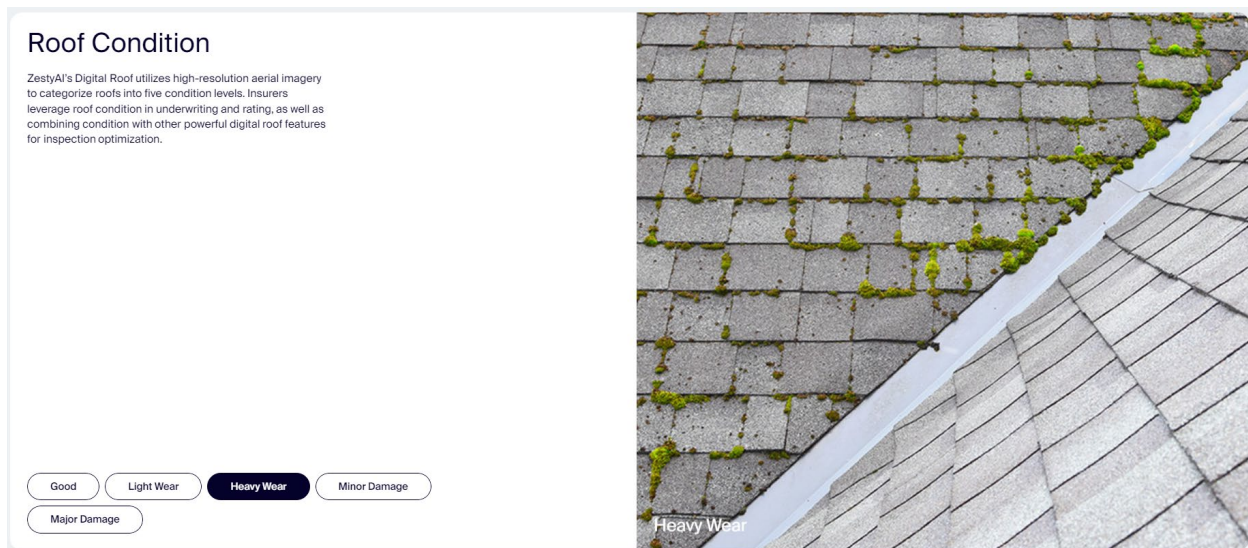
Id. at 6.

146.   Upon information and belief, when Defendant operates Z-PROPERTY, Defendant responsive to receiving the request, causes presentation of, for review by the user at the remote computing device, a graphical user interface comprising information regarding the plurality of characteristics and the condition of each feature of the at least one property feature. For example, upon information and belief, Defendant causes an image substantially similar to the one set forth below to be displayed to the user, which includes information about a roof.
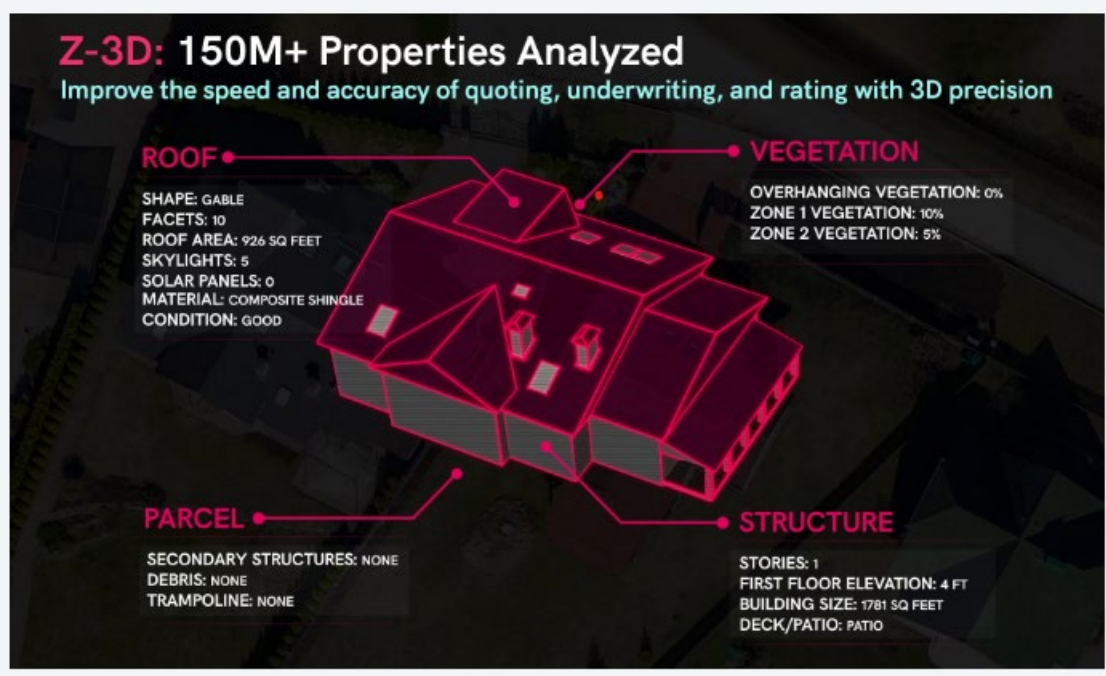
Ex. 11 at 2.

147.   Upon information and belief, Defendant's infringement of the '058 patent has been and continues to be willful.

148.   Defendant was placed on formal notice of its infringement of the patents-in-suit no later than April 20, 2023, when it received a notice letter from Aon. *See* Ex. 8 at 1.

149.   Defendant has caused Plaintiff damage by direct infringement of the claims of the '058 patent.

150.   In accordance with 35 U.S.C. § 287, Defendant has had actual notice and knowledge of the '058 patent since at least April 20, 2023, and no later than the filing of this Complaint.

151.   On information and belief, Defendant continues, without license, to make, use, import, market, offer for sale, and/or sell in the United States services or products that infringe the '058 patent.

152.   Defendant has directly infringed and continues to directly infringe the '058 patent by engaging in acts constituting infringement under 35 U.S.C. § 271(a), including but not necessarily limited to one or more of making, using, selling and offering to sell, in this District its Z-PROPERTY product, which is also referred to as "Location Insights" on Defendant's website (https://zesty.ai/products/location-insights), and includes "Digital Roof," "Roof Age," "Z-VIEW," "Z-STORM," "Z-FIRE," "Z-WIND," and "Z-HAIL." *See*, *e.g.*, Ex. 6 at 39-48.

153.   Defendant's infringement of the '058 patent has injured Aon in its business and property rights. Aon is entitled to recover monetary damages for the injuries arising from Defendant's infringement in an amount to be determined at trial.

154.   Defendant's infringement of the '058 patent has caused irreparable harm to Aon and will continue to cause such harm unless and until Defendant's infringing activities are enjoined by this Court.

155.   Defendant continues to commit acts of infringement despite a high likelihood that its actions constitute infringement, and Defendant knew or should have known that its actions constituted an unjustifiably high risk of infringement of the '058 patent. Defendant's continuing infringement of the '058 patent after the filing of this Complaint is particularly egregious.

156.   Defendant's infringement of the '058 patent is exceptional and entitles Aon to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

157.   The full extent of Defendant's infringement is not presently known to Aon. Aon makes this preliminary identification of infringing products and infringing claims in Count Seven without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

COUNT EIGHT

INDIRECT INFRINGEMENT OF U.S. PATENT NO. 11,195,058

158.   Aon incorporates by reference the allegations in paragraphs 1-157 as if fully set forth herein.

159.   Aon has accused Defendant of directly infringing at least claim 1 of the '058 patent by making, using, offering to sell, selling, and/or importing a commercial offering marketed as "Z-PROPERTY."

160.   On information and belief, Zesty, with knowledge of the '058 patent, and without authority, has actively induced and continues to actively induce infringement by end-users of at least one claim of the '058 patent, under 35 U.S.C. § 271(b), by intentionally inducing the use, importation, offer for sale, and/or sale of its Z-PROPERTY products, intending to encourage, and in fact encouraging, end-users to directly infringe the '058 patent.

161.   On information and belief, Zesty actively induced infringement by, *inter alia*, introducing into the stream of commerce the Z-PROPERTY products, and by publishing promotional literature describing and instructing in the operation of the accused systems in an infringing manner and by offering support and technical assistance to its customers that encourage use of the accused products in ways that infringe the asserted claims. In addition to the statements mentioned *supra* in this Complaint, on its website Zesty advertises that "Z-VIEW™ gives Z-PROPERTY™ users the ability to quickly access property insights for any address or portfolio," and promises that "With Z-PROPERTY™ Accurate property information is automatically incorporated into underwriting for enhanced risk selection, better rating, and increased premium capture." *See, e.g.*, Ex. 6 at 5, 2. Zesty also encourages customers to use its infringing products in an infringing manner through its meetings and partnerships with customers, its publication of

numerous "Case Studies" and "Stories From Our Customers & Partners" who are described as using "ZestyAI's Z-FIRE," "Z-HAIL," and "Z-WIND" systems, and by promising to "deliver 10X on every dollar that our customers invest." *See*, *e.g.*, *id.* at 20-35, 12.

162.   In addition, Zesty has had actual knowledge of end users' direct infringement and that Zesty's acts induced such infringement since at least April 20, 2023, and no later than the date Zesty received this Complaint. *See* Ex. 8.

163.   The full extent of Defendant's infringement is not presently known to Aon. Aon makes this preliminary identification of infringing products and infringing claims in Count Eight without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

PRAYER FOR RELIEF

WHEREFORE, Aon prays for the following judgments and relief:

(a)   A judgment that Defendant has infringed and is infringing the patents-in-suit;

(b)   A permanent injunction against Defendant and its affiliates, subsidiaries, assigns, employees, agents or anyone acting in privity or concert from infringing the patents-in-suit, including enjoining the making, offering to sell, selling, using, or importing into the United States products claimed in any of the claims of the patents-in-suit; using or performing methods claimed in any of the claims of the patents-in-suit; inducing others to use and perform methods that infringe any claim of the patents-in-suit; or contributing to others using and performing methods that infringe any claim of the patents-in-suit, until the expiration of the last to expire patent-in-suit;

(c)   An award of damages adequate to compensate Aon for Defendant's patent infringement, and an accounting to adequately compensate Aon for the infringement, including, but not limited to, lost profits and/or a reasonable royalty;

(d)   An award of enhanced damages under 35 U.S.C. § 284 of treble damages based on the willful and deliberate nature of Defendant's infringement;

(e)   An award of pre-judgment and post-judgment interest at the maximum rate allowed by law;

(f)   An order finding that this is an exceptional case and awarding Aon its costs, expenses, disbursements, and reasonable attorneys' fees related to Defendant's patent infringement under 35 U.S.C. § 285 and all other applicable statutes, rules and common law; and

(g)   Such other further relief, in law or equity, as this Court deems just and proper.

JURY TRIAL

In accordance with Rule 38 of the Federal Rules of Civil Procedure, Aon hereby demands a jury trial on all issues triable before a jury.

Dated: February 19, 2025

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