APPENDIX 1

Appendix 1

Preliminary Ineligibility Contentions – U.S. Patent No. 6,718,277

The following chart contains Vertiv's preliminary Ineligibility Contentions demonstrating that Claims 1-21 of U.S. Patent No. 6,718,277 (the "'277 patent") are patent-ineligible under 35 U.S.C. § 101 pursuant to the Court's Standing Order Regarding Subject Matter Eligibility Contentions. Nothing in this claim chart should be construed as an admission regarding infringement, either literally or under the doctrine of equivalents, or as an admission regarding Vertiv's understanding of the proper scope of the Asserted Claims. Given Plaintiff's vague and ambiguous infringement contentions, the exemplary citations herein necessarily account for a variety of possible infringement arguments and claim constructions. Vertiv reserves the right to rely on additional citations or sources of evidence that also may be applicable, or that may become applicable in light of claim construction, changes in Plaintiff's infringement contentions, and/or information obtained during discovery as the case progresses. Various positions put forth in this document are predicated on Plaintiff's overly broad interpretation of its claims as evidenced by the infringement allegations received to date. Those positions are not intended to and do not necessarily reflect Vertiv's interpretation of the true and proper scope of Plaintiff's claims, and Vertiv reserves the right to adopt claim construction positions that differ from or even conflict with various positions put forth in this document.

Vertiv reserve the right to amend or supplement this claim chart at a later date pursuant to the Docket Control Order issued by the Court on September 3, 2024 (Dkt. No. 60).

A. Chart Identifying Exception to Eligibility, Representative Claims, Relevant Industry and Time Period, Materials That Support Patent Ineligibility, And Relevant Case Law

Exception To Eligibility	The Asserted Claims of the '277 patent are directed to an abstract idea. Specifically, the Asserted Claims are directed to the abstract idea of collecting, organizing, and analyzing data to evaluate a cooling system and make appropriate adjustments. *See, e.g.*, '277 patent at 2:42-55; Fig. 2. The claims of the '277 patent itself establish that they are directed to collecting, organizing, and analyzing data to evaluate a cooling system and make appropriate adjustments. *See, e.g.*, '277 patent at claim 1 ("generating an empirical atmospheric map from the results of said sensing step using software for processing input from said sensing step and for producing output in the form of said empirical atmospheric map"; "comparing said empirical atmospheric map to a template atmospheric map"; "identifying pattern differentials between said empirical and template atmospheric maps"); *id*. at claim 2 ("determining corrective action to reduce said pattern differentials"); *id*. at claim 4 ("correlating at least one of the location, size, and intensity of said pattern differentials to at least one of the location of said plurality of vents, the speed of said at least one blower, and the capacity of said at least one source of conditioned air"); *id*. at claim 6 ("using thermal mapping software to process input from said sensing step and to produce output in the form of said empirical atmospheric map"); *id*. at claim 7 ("said identifying step comprises using pattern recognition software"); *id*. at claim 10 ("generating a map composed of temperature contours that define various isothermal regions"); *id*. at claim 11 ("the step of identifying pattern differentials between said empirical and template atmospheric maps comprises performing at least one of extrapolation and triangulation to determine locations of one or more hot spots"); *id*. at claim 12 ("generating an empirical thermal map of said data center from the results of said sensing step using software for processing input from said sensing step and for producing output in the form of said empirical thermal map"; "comparing said empirical thermal map to a template thermal map"; "identifying pattern differentials between said empirical and template thermal maps"); *id*. at claim 13 ("determining corrective action to reduce said pattern differentials; and varying at least one of the quantity, quality, and distribution of said cooling fluid in accord with said determining step"); *id*. at claim 15 ("correlating at least one of the location, size, and intensity of said pattern differentials to at least one of the location of said plurality of vents, the speed of said at least one blower, and the capacity of said at least one source of conditioned air"); *id*. at claim 17 ("using thermal mapping software to process input from said sensing step and to produce output in the form of said empirical thermal map, wherein said thermal mapping software triangulates locations of hot spots"); *id*. at claim 18 ("identifying step comprises using pattern recognition software"); *id*. at claim 20 ("generating a map composed of temperature contours that define

	various isothermal regions"); *id*. at claim 21 ("the step of identifying pattern differentials between said empirical and template atmospheric maps comprises performing at least one of extrapolation and triangulation to determine locations of one or more hot spots"). Collecting, organizing, and analyzing data to evaluate a cooling system and make appropriate adjustments constitutes an abstract idea. *See, e.g.*, *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) ("[M]ental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work."); *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) ("[W]e have treated collecting information, including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas"); *see also id*. at 1354 ("[W]e have treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category." . . . "[W]e have recognized that merely presenting the results of abstract processes of collecting and analyzing information, without more (such as identifying a particular tool for presentation), is abstract as an ancillary part of such collection and analysis."); *see also Parker v. Flook*, 437 U.S. 584 (1978) (process involving calculating and updating alarm limit values for alarms that monitor process variables (such as temperature) during chemical process constitutes an abstract idea). Monitoring atmospheric conditions within a building, organizing the associated data into a visual format, and evaluating the data for the purpose of making adjustments as necessary is as basic as a person living in a house with windows that can be open and closed. The person senses or monitors the temperature within one or more rooms of the house. If the temperature is too high and the person feels hot, the person can open the windows so that cooling air from the outside is supplied into the building. If the temperature is too low and the person feels cold, the person can close the windows, thus cutting off the flow of air from the outside. It may be desirable for different rooms or locations in the house to have different temperatures. The person monitors the rooms and adjusts the windows as necessary to achieve the desired temperature distribution within different rooms or locations in the house. A person living in a house equipped with conventional air conditioning performs similar monitoring, analysis, and adjustment steps to control the atmospheric conditions within rooms or regions of the house. The person senses or monitors the temperature within one or more rooms or regions of the house. If the temperature is too high and the person feels hot, the person can adjust a vent in the room so that more cool air is supplied to the

	room. If the temperature is too low and the person feels cold, the person can adjust a vent in the room so that less cool air is supplied to the room. The person can repeat this process for multiple rooms or regions, individually manipulating air conditioning vents to achieve a desired temperature range within each room or region. The person may maintain or keep a "map" using pencil and paper or in her/his mind of what should be the preferred condition (e.g., temperature) of each room. The person monitors the rooms over time, creating another "map" using pencil and paper or in her/his mind of what the actual conditions are for each room, and then compares the map of the preferred conditions against the map of the actual conditions for the purpose of determining deviations from the preferred conditions and implementing corrective action to reduce or eliminate the deviations.
Representative Claims	Claim 1 is representative of each of the other Asserted Claims of the '277 Patent.
Relevant Industry and Time Period	The relevant industry is cooling systems for buildings. For purposes of these Subject Matter Eligibility Contentions, Vertiv has assumed the relevant time period is 2002, based on Plaintiff's asserted priority date and the filing date of the application that issued the '277 Patent.
Material Supporting Patent Ineligibility[1]	• Vertiv' Invalidity Contentions and all materials cited therein • Exhibits A-1 to A-10 of Appendix 1 and all materials cited therein
Relevant Legal Authorities[2]	<u>General Section 101 authority:</u> • *Gottschalk v. Benson*, 409 U.S. 63 (1972)

[1] In addition to the listed materials, Vertiv reserves the right to rely on: (1) all intrinsic evidence including the '277 Patent itself and its prosecution history; (2) extrinsic evidence obtained or disclosed during the course of fact discovery, including inventor testimony; and (3) extrinsic evidence obtained or disclosed during the course of expert discovery including, expert testimony.

[2] The listing of relevant case law is exemplary. Vertiv reserve the right to rely on additional legal authorities to support their subject matter eligibility positions in this litigation.

	• *Parker v. Flook*, 437 U.S. 584 (1978) • *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014) • *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018) • *Secured Mail Sols. LLC v. Universal Wilde, Inc.*, 873 F.3d 905 (Fed. Cir. 2017) • *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322 (Fed. Cir. 2017) • *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607 (Fed. Cir. 2016) • *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016) • *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016) • *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016) • *Yu v. Apple Inc.*, 1 F.4th 1040 (Fed. Cir. 2021) • *TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278 (Fed. Cir. 2020) • *Smart Sys. Innovations, LLC. V. Chi. Transit Authority*, 873 F.3d 1364 (Fed. Cir. 2017) • *ChargePoint, Inc. v. Sema-Connect, Inc.*, 920 F.3d 759 (Fed. Cir. 2019) • *Cybersource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011) <u>Cases relevant to abstract idea inquiry at *Alice* step one:</u> • *Move, Inc. v. Real Estate All., Ltd.*, 221 F. Supp. 3d 1149 (C.D. Cal. 2016), affirmed 721 F. App'x 950 (Fed. Cir. 2018) • *Rothschild Location Techs. LLC v. Geotab USA, Inc.*, 2016 WL 3584195 (E.D. Tex. Jan. 4, 2016), report and rec. adopted, 2016 WL 2847975 (E.D. Tex. May 16, 2016) • *Peschke Map Techs. LLC v. Rouse Props. Inc.,* 168 F. Supp. 3d 881 (E.D. Va. 2016) • *Encyc. Britannica, Inc. v. Dickstein Shapiro LLP*, 128 F. Supp. 3d 103 (D.D.C. 2015), aff'd 653 F. App'x 764 (D.C. Cir. 2016) • *Concaten, Inc. v. Ameritrak Fleet Solutions, LLC*, 131 F. Supp. 3d 1166 (D. Colo. 2015) • *Location Based Services, LLC v. Google LLC*, C.A. No. 17-83-LPS, 2019 WL 2904670 (D. Del. July 5, 2019) • *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.,* 841 F.3d 1288 (Fed. Cir. 2016) • *In re Marco Guldenaar Holding B.V.*, 911 F.3d 1157 (Fed. Cir. 2018) • *Solutran, Inc. v. Elavon, Inc.*, 931 F.3d 1161 (Fed. Cir. 2019) • *PersonalWeb Technologies LLC v. Google LLC*, 8 F.4th 1310 (Fed. Cir. 2021) • *Mortgage Grader, Inc. v. First Choice Loan Services, Inc.*, 811, F.3d 1314 (Fed. Cir. 2016)

	• *WhitServe LLC v. Dropbox, Inc.*, 854 F. App'x 367, 372 (Fed. Cir. 2021) Cases relevant to inventive concept inquiry at *Alice* step two: • *Amdocs (Israel) Ltd. v. Opennet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016) • *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015) • *Data Engine Technologies LLC v. Google LLC*, 906 F.3d 999 (Fed. Cir. 2018) • *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322 (Fed. Cir. 2017) • *Intellectual Ventures I LLC v. Capital One Bank (NA)*, 792 F.3d 1363 (Fed. Cir. 2015) • *Elec. Commc'n Techs., LLC v. Shopperschoice.com*, 958 F.3d 1178, 1183 (Fed. Cir. 2020) • *Affinity Labs of Texas, LLC v. DirecTV, LLC,* 838 F.3d 1253, 1263 (Fed. Cir. 2016) • *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161 (Fed. Cir. 2018) • *Digitech Image Technologies, LLC v. Elctronics for Imaging, Inc., et al.,* 758 F.3d 1344 (2014) • *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) Other relevant authority: • *Apple Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016) • *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014)

B. Chart Describing How Claim Elements, Individually or In Combination, Were Well Understood, Routine, And Conventional

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
	The relevant industry for the '277 patent is the cooling systems for buildings industry. As detailed below, each claim element was well-understood, routine, and conventional in that industry as of April 17, 2002.[3] In addition, the claim elements in combination were also well-understood, routine, and conventional. Collectively, the claim elements recite nothing more than a combination of components, each of which is generic and well-known in the art. Nothing about the claimed method is anything other than generic, functional, well-understood, routine, or conventional.
1[pre] A method of controlling atmospheric conditions within a building, said method comprising the steps of:	Vertiv incorporates by reference the prior art identified in the '277 patent, the prosecution history of the '277 patent, any related litigations, and any related PTAB proceedings. Vertiv further incorporates by reference any prior art identified or to be identified in their invalidity contentions and/or expert reports that will be provided according to the schedule provided by the Court's Docket Control Order, including the state of the art addressed in Section IV of Vertiv's invalidity contentions and the claim charts attached as Exhibits A-1 to A-10 to Vertiv's invalidity contentions. To the extent the preamble is limiting, methods for controlling atmospheric conditions within a building were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that the preamble was well understood, routine, and conventional. *See, e.g.*, '277 patent at 1:37–2:39 (describing

[3] Vertiv notes that, under Supreme Court and Federal Circuit precedent, the Court need not, and should not, consider whether each and every element of each Challenged Claim was well understood, routine, and conventional. Rather, the only elements which should be considered under Alice step 2 are the elements that fall outside the scope of the abstract idea. *See Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 221-224 (2014); *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) ("It has been clear since Alice that a claimed invention's use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention 'significantly more' than that ineligible concept.").

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
	known methods of controlling atmospheric conditions within a building using one or more air conditioning units). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for the preamble found in the claim charts attached as Exhibits A-1 to A-10 to Vertiv's invalidity contentions.
1[a] supplying a conditioned fluid inside said building;	Methods of controlling building atmospheric conditions comprising supplying a condition fluid inside the building were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 2:6–39 (describing that data centers are typically cooled by air conditioning units). *See, e.g.*, '277 patent at 5:16–54 (describing the use of well-known air conditions systems to supply cooling fluid, such as conditioned air, to a building). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
1[b] sensing at least one atmospheric parameter in a plurality of locations inside said building;	Methods of controlling building atmospheric conditions comprising sensing at least one atmospheric parameter in a plurality of locations inside said building were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 6:65-67 (describing sensing temperature at various locations within a data center without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional). *See, e.g.*, '277 patent at 3:3-14 (indicating that the purported invention would be understood as applicable to other types of sensed atmospheric conditions without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional). *See, e.g.*, '277 patent at 4:12-34 (describing the use of various types of atmospheric sensors disbursed at various

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
	locations and elevations within a data center without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
1[c] generating an empirical atmospheric map from the results of said sensing step;	Methods of controlling building atmospheric conditions comprising generating an empirical atmospheric map from the results of said sensing step were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 4:35-67 (describing generic computer programmed with thermal mapping software capable of processing sensed temperature date into a thermal map showing temperature contours throughout locations of a data center). *See, e.g.*, '277 patent at 6:36-59 (indicating that computational fluid dynamics software tools for generating thermal maps and modeling other atmospheric parameters were widely available and known to those skilled in the art). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in the claim charts A-1, *et seq*.
1[d] comparing said empirical atmospheric map to a template atmospheric map; and	Methods of controlling building atmospheric conditions comprising comparing an empirical atmospheric map to a template atmospheric map were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 5:1-15 (describing generic computer programmed with commonly known pattern recognition software for automating the human mental process of recognizing pattern differentials).

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
	Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
1[e] identifying pattern differentials between said empirical and template atmospheric maps.	Methods of controlling building atmospheric conditions comprising identifying pattern differentials between said empirical and template atmospheric maps were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 5:1-15 (describing generic computer programmed with commonly known pattern recognition software for automating the human mental process of recognizing pattern differentials). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
2[pre] The method as claimed in claim 1, further comprising the steps of:	*See* disclosures for Claim 1.
2[a] determining corrective action to reduce said pattern differentials; and	Methods of controlling building atmospheric conditions comprising determining corrective action to reduce said pattern differentials were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 5:1-18 (describing generic computer programmed with strategic software capable of determining corrective action to minimize identified pattern differentials, such as conventional techniques of varying one or more of the quantity, quality, and distribution of the cooling fluid used to cool the data center). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
2[b] varying at least one of the quantity, quality, and distribution of said conditioned fluid in accord with said determining step.	Methods of controlling building atmospheric conditions comprising varying at least one of the quantity, quality, and distribution of said conditioned fluid in accord with said determining step were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 2:20-39 (describing conventional practice of varying air conditioner output to adjust temperature distribution within a data center). *See, e.g.*, '277 patent at 5:16-54 (describing known approach of adjusting cooling system control variables to vary one or more of quantity, quality and distribution of cooling fluid used to cool the data center). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
[3] The method as claimed in claim 2, wherein said supplying step comprises the step of operating a system having at least one of a plurality of vents, at least one blower, and at least one source of conditioned air.	Methods of controlling building atmospheric conditions comprising operating a system having at least one of a plurality of vents, at least one blower, and at least one source of conditioned air were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 5:16-30 (describing cooling systems that include variable-speed air movers or blowers and dampers or vents as being well-known in the field of heating, ventilation and air conditioning). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
[4] The method as claimed in claim 3, wherein said determining step comprises correlating at least one of the location, size, and intensity of said pattern differentials to	Methods of controlling building atmospheric conditions comprising correlating at least one of the location, size, and intensity of said pattern differentials to at least one of the location of said plurality of vents, the speed of said at least one blower, and the capacity of said at least one source of conditioned air were well understood, routine, and conventional in the relevant industry at the relevant time period.

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
at least one of the location of said plurality of vents, the speed of said at least one blower, and the capacity of said at least one source of conditioned air.	For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 5:1-15 (describing generic computer programmed with commonly known pattern recognition software for automating the human mental process of recognizing pattern differentials). *See, e.g.*, '277 patent at 6:43-59 (describing conventional and widely available CFD software capable of modeling data center cooling systems components and operational parameters as well as the effects of adjusting cooling system variables). *See, e.g.*, '277 patent at 7:7-17 (describing generic computer programmed with strategic software for correlating the location, size, and intensity of pattern differentials to develop a course of corrective action). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
[5] The method as claimed in claim 4, wherein said varying step comprises adjusting at least one of the opening of said plurality of vents, the speed of said at least one blower, and the output of said at least one source of conditioned air.	Methods of controlling building atmospheric conditions comprising adjusting at least one of the opening of said plurality of vents, the speed of said at least one blower, and the output of said at least one source of conditioned air were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 5:16-30 (confirming that cooling systems that include variable-speed air movers or blowers and dampers or vents were well-known in the field of heating, ventilation and air conditioning). *See, e.g.*, '277 patent at 2:20-39 (describing conventional practice of varying air conditioner output to adjust temperature distribution within a data center). *See, e.g.*, '277 patent at 5:16-54 (describing known approach of adjusting cooling system control variables to vary one or more of quantity, quality and distribution of cooling fluid used to cool the data center). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
[6] The method as claimed in claim 1, wherein said generating step comprises using thermal mapping software to process input from said sensing step and to produce output in the form of said empirical atmospheric map.	Methods of controlling building atmospheric conditions comprising using thermal mapping software to process input from said sensing step and to produce output in the form of said empirical atmospheric map were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 4:35-67 (describing generic computer programmed with thermal mapping software capable of processing sensed temperature date into a thermal map showing temperature contours throughout locations of a data center). *See, e.g.*, '277 patent at 6:36-59 (characterizing computational fluid dynamics software tools for generating thermal maps and modeling other atmospheric parameters as widely available and known to those skilled in the art). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
[7] The method as claimed in claim 1, wherein said identifying step comprises using pattern recognition software.	Methods of controlling building atmospheric conditions wherein the identifying step comprises using pattern recognition software were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 5:1-15 (describing generic computer programmed with commonly known pattern recognition software for automating the human mental process of recognizing pattern differentials). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
[8] The method as claimed in claim 1, wherein said plurality of locations of said sensing step comprises locations at various	Methods of controlling building atmospheric conditions comprising sensing an atmospheric parameter at various elevations within a building were well understood, routine, and conventional in the relevant industry at the relevant time period.

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
elevations within said building.	For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 6:65-67 (describing sensing temperature at various locations within a data center without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional). *See, e.g.*, '277 patent at 3:3-14 (indicating that the purported invention would be understood as applicable to other types of sensed atmospheric conditions without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional). *See, e.g.*, '277 patent at 4:35-67 (describing the known capability of thermal mapping software to process temperature data collected at a range of elevations within a data center). *See, e.g.,* '277 patent at 4:12-34 (describing the use of various types of atmospheric sensors disbursed at various locations and elevations within a data center without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
[9] The method as claimed in claim 1, wherein said sensing step comprises using at least one of temperature sensors, humidity sensors, pressure sensors, particle sensors, smoke sensors, and velocity sensors.	Methods of controlling building atmospheric conditions comprising using at least one of temperature sensors, humidity sensors, pressure sensors, particle sensors, smoke sensors, and velocity sensors were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 6:65-67 (describing sensing temperature at various locations within a data center without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional). *See, e.g.*, '277 patent at 3:3-14 (indicating that the purported invention would be understood as applicable to other types of sensed atmospheric conditions without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional). *See, e.g.*, '277 patent at 4:12-34 (describing the use of various types of atmospheric sensors disbursed at various locations and elevations within a data center without specifying any special feature or improvement thereto, indicating that the claimed feature is generic, well-known, and conventional).

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
	Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
[10] The method as claimed in claim 1, wherein the step of generating an empirical atmospheric map comprises generating a map composed of temperature contours that define various isothermal regions.	Methods of controlling building atmospheric conditions comprising generating an empirical atmospheric map comprises generating a map composed of temperature contours that define various isothermal regions were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 4:35-67 (describing generic computer programmed with thermal mapping software capable of processing sensed temperature date into a thermal map showing temperature contours throughout locations of a data center). *See, e.g.*, '277 patent at 6:36-59 (characterizing computational fluid dynamics software tools for generating thermal maps and modeling other atmospheric parameters as widely available and known to those skilled in the art). Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
[11] The method as claimed in claim 1, wherein the step of identifying pattern differentials between said empirical and template atmospheric maps comprises performing at least one of extrapolation and triangulation to determine locations of one or more hot spots.	Methods of controlling building atmospheric conditions comprising identifying pattern differentials between said empirical and template atmospheric maps by performing at least one of extrapolation and triangulation to determine locations of one or more hot spots were well understood, routine, and conventional in the relevant industry at the relevant time period. For example, the intrinsic record, including the specification of the '277 patent, establishes that this element was well understood, routine, and conventional. *See, e.g.*, '277 patent at 5:1-15 (describing generic computer programmed with commonly known pattern recognition software for automating the human mental process of recognizing pattern differentials). *See, e.g.*, '277 patent at 4:50-67 (characterizing extrapolation and triangulation as known techniques of conventional mapping software tools).

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
	Vertiv further incorporates by reference the state of the art addressed in Section IV of Vertiv's invalidity contentions and citations for this claim element found in claim charts A-1, *et seq*.
12[pre] A method of cooling a data center having equipment therein, said method comprising the steps of:	Methods of cooling a data center having equipment therein were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for claim 1 preamble.
12[a] supplying a cooling fluid within said data center to cool said equipment within said data center;	Methods of cooling a data center comprising supplying a cooling fluid within said data center to cool equipment within said data center were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosure for claim element 1[a].
12[b] sensing temperature within said data center in a plurality of locations;	Methods of cooling a data center comprising sensing temperature within said data center in a plurality of locations were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for claim element 1[b].
12[c] generating an empirical thermal map of said data center from the results of said sensing step;	Methods of cooling a data center comprising generating an empirical thermal map of said data center from the results of said sensing step comprising were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for claim element 1[c].
12[d] comparing said empirical thermal map to a template thermal map; and	Methods of cooling a data center comprising comparing said empirical thermal map to a template thermal map were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for claim element 1[d].

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
12[e] identifying pattern differentials between said empirical and template thermal maps.	Methods of cooling a data center comprising identifying pattern differentials between said empirical and template thermal maps were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for claim element 1[e].
13[pre] The method as claimed in claim 12, further comprising the steps of:	*See* disclosures for Claim 12.
13[a] determining corrective action to reduce said pattern differentials; and	Methods of cooling a data center comprising determining corrective action to reduce said pattern differentials were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for claim element 2[a].
13[b] varying at least one of the quantity, quality, and distribution of said cooling fluid in accord with said determining step.	Methods of cooling a data center comprising varying at least one of the quantity, quality, and distribution of said cooling fluid in accord with said determining step were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for claim element 2[b].
[14] The method as claimed in claim 13, wherein said supplying step comprises operating a system having at least one of a plurality of vents, at least one blower, and at least one source of conditioned air.	Methods of cooling a data center comprising operating a system having at least one of a plurality of vents, at least one blower, and at least one source of conditioned air were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for Claim 3.
[15] The method as claimed in claim 14, wherein said determining step comprises	Methods of cooling a data center comprising correlating at least one of the location, size, and intensity of said pattern differentials to at least one of the location of said plurality of vents, the speed of said at

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
correlating at least one of the location, size, and intensity of said pattern differentials to at least one of the location of said plurality of vents, the speed of said at least one blower, and the capacity of said at least one source of conditioned air.	least one blower, and the capacity of said at least one source of conditioned air were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for Claim 4.
[16] The method as claimed in claim 15, wherein said varying step comprises adjusting at least one of the opening of at least one of said plurality of vents, the speed of said at least one blower, and the output of said at least one source of conditioned air.	Methods of cooling a data center comprising adjusting at least one of the opening of at least one of said plurality of vents, the speed of said at least one blower, and the output of said at least one source of conditioned air were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for Claim 5.
[17] The method as claimed in claim 12, wherein said generating step comprises using thermal mapping software to process input from said sensing step and to produce output in the form of said empirical atmospheric map, wherein said thermal mapping software triangulates locations of hot spots.	Methods of cooling a data center comprising using thermal mapping software to process input from said sensing step and to produce output in the form of said empirical atmospheric map, wherein said thermal mapping software triangulates locations of hot spots were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for Claim 6.

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
[18] The method as claimed in claim 12, wherein said identifying step comprises using pattern recognition software.	Methods of cooling a data center wherein the identifying step comprises using pattern recognition software were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for Claim 7.
[19] The method as claimed in claim 12, wherein said plurality of locations of said sensing step comprises locations at various elevations within said data center.	Methods of cooling a data center comprising sensing at various elevations within the data center were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for Claim 8.
[20] The method as claimed in claim 12 wherein the step of generating an empirical atmospheric map comprises generating a map composed of temperature contours that define various isothermal regions.	Methods of cooling a data center comprising generating a map composed of temperature contours that define various isothermal regions were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for Claim 10.
[21] The method as claimed in claim 12, wherein the step of identifying pattern differentials between said empirical and template atmospheric maps comprises performing at least one of extrapolation and triangulation to determine	Methods of cooling a data center comprising performing at least one of extrapolation and triangulation to determine locations of one or more hot spots were well understood, routine, and conventional in the relevant industry at the relevant time period. *See* disclosures for Claim 11.

Asserted Claims of '277 Patent	Section 101 Contentions Regarding Whether Claim Elements Were Well Understood, Routine, and Conventional
locations of one or more hot spots.	