

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DUKE MANUFACTURING CO.,
Petitioner

v.

MARMON FOODSERVICE TECHNOLOGIES, INC.
Patent Owner.

Case IPR2026-00406
Patent 10,852,002

PATENT OWNER'S PRELIMINARY RESPONSE

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815 F.3d 1331, 1348 (Fed. Cir. 2016) 13, 16, 17, 18

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929 F.3d 1363, 1371-72 (Fed. Cir. 2019) passim

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35 U.S.C. § 325(d) 26, 36

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PATENT OWNER’S EXHIBIT LIST

EX NO.	DOCUMENT
2001	Complaint, <i>Marmon Foodservice Technologies, Inc. v. Duke Manufacturing Co.</i> , Case No. 4:25-cv-01491-ZMB (E.D. Mo.), Dkt. 1, filed October 3, 2025.
2002	Joint Proposed Scheduling Plan, <i>Marmon Foodservice Technologies, Inc. v. Duke Manufacturing Co.</i> , Case No. 4:25-cv-01491-ZMB (E.D. Mo.), Dkt. 45, filed August 25, 2026.
2003	Docket Report, <i>Marmon Foodservice Technologies, Inc. v. Duke Manufacturing Co.</i> , Case No. 4:25-cv-01491-ZMB (E.D. Mo.), retrieved September 8, 2026.
2004	Duke Manufacturing Co.’s Response To Marmon’s Request For An Initial Pretrial Conference, <i>Marmon Foodservice Technologies, Inc. v. Duke Manufacturing Co.</i> , Case No. 4:25-cv-01491-ZMB (E.D. Mo.), Dkt. 36, filed June 8, 2026.
2005	Declaration of Michael Mattingly
2006	Declaration of Dr. Timothy J. Bowser
2007	<i>Curriculum Vitae</i> of Dr. Timothy J. Bowser
2008	Duke Product Holding Unit Comparison Charts
2009	SWAINSON, Mark, “Food Sector Challenges and the Role of Technical and Quality Management” (2019)
2010	American Meat Science Association, “Research Guidelines for Cookery, Sensory Evaluation, and Instrumental Tenderness Measurements of Meat” (2015)
2011	LI et al., “Smart Manufacturing Standardization: Architectures, Reference Models and Standards Framework” (2018)

2012	BRYAN, Frank, “Hazard Analysis Critical Control Point (HACCP) Systems for Retail Food and Restaurant Operations” (1990)
2013	ASTM International Standard Test Method for Performance of Cook-and-Hold Ovens (reapproved 2026)
2014	ASTM International Standard Specification for Hot Food Holding Tables
2015	ASTM International Standard Specification for Slow Cook/Hold Ovens and Hot Food Holding Cabinets (reapproved 2020)
2016	ASTM International Standard Test Method for Performance of Hot Food Holding Cabinets
2017	International Standard ISO 11036: Sensory Analysis, Methodology, Texture Profile
2018	International Standard ISO 11037: Sensory Analysis – Guidelines for Sensory Assessment of the Colour of Products
2019	ASTM International Standard Guide for Sensory Claim Substantiation (2026)
2020	HOLST, Meghan M. et al. “Environmental Antecedents of Foodborne Illness Outbreaks, United States, 2017–2019” (2024)
2021	U.S. Department of Health and Human Services Food and Drug Administration, “Guidance for Industry – Process Validation: General Principles and Practices” (2011)
2022	Burger King Extended Holding Proposal
2023	Email re: Draft PHU Approval (2015-01-30)
2024	Burger King Next Gen Food Holding
2025	Email re: Prince Castle 2 nd Gen Bin Install (2015-04-21)
2026	Email Chain re: Prince Castle New PHU (2015-04-21)

2027	Email Chain re: Prince Castle Minder 6.01.50 Upgrade (2015-04-21)
2028	Email Chain re: New PHU (2015-04-22)
2029	Email Chain re: Manual (2015-05-12)
2030	Prince Castle Gen. II PHU Teardown Report by Jack McCluskey (2015-07-15)
2031	Prince Castle Extended Hold Sensory Test Report: Eggs and French Toast by Kyle Kestner (2015-01-09)
2032	Prince Castle Extend Holding Bin DHB-BK24 Series Operation Manual
2033	Duke Infrared Product Holding Units Sell Sheet
2034	Duke Heatsink Product Holding Units Sell Sheet
2035	U.S. Patent No. 6,175,099
2036	U.S. Patent No. 7,105,779
2037	U.S. Patent No. 7,227,102
2038	U.S. Patent Application Publication No. 2014/0130684
2039	Declaration of Kyle Kestner

I. Introduction

The Petition presents a deceptively simple theory. According to Petitioner Duke Manufacturing, the challenged claims merely combine familiar food-holding technologies reflected in Fortmann and Petitioner's alleged IRHS disclosures. The Petition repeatedly characterizes the asserted modifications as "predictable variations" of known systems and treats the resulting combinations as "routine" engineering choices.

During the same period that Petitioner promoted and commercialized its IRHS platform, Prince Castle was developing and deploying the technology that ultimately became the subject of the challenged patents. As a result, the contemporaneous record does not merely reveal what was known in the industry. It also captures competing approaches to the same food-quality and hold-time problems as they were being developed, tested, commercialized, and evaluated by customers. That record tells a different story than the one presented in the Petition.

First, Petitioner relies upon Fortmann '197 and/or Fortmann '967 in multiple grounds, including Grounds 4, 6, 7, and 9-12. The record, however, reflects inventor-directed installation of Prince Castle's next-generation food-holding system in operating Burger King restaurants beginning on April 21, 2015, direct inventor participation in those deployments, subsequent operation and evaluation by Burger

King personnel, and distribution of technical documentation describing the installed system before Fortmann's asserted July 17, 2015, effective filing date. Those facts raise a substantial question whether the subject matter upon which Petitioner relies had already been disclosed by the inventors before Fortmann was effectively filed.

Second, Petitioner's IRHS theory depends upon treating multiple evolving documents as though they collectively describe a single prior-art reference. Petitioner's own evidence demonstrates that no single disclosure exists that even allegedly discloses any claim of the '002 patent in its entirety. The IPR record contains prototype systems, production systems, evolving firmware revisions, revised specifications, revised manuals, service materials, website content, and different generations of product documentation. Rather than identify a single publication containing the asserted feature set, Petitioner relies upon a collection of documents and asks the Board to reconstruct a unified disclosure using the patent claims as a roadmap.

Indeed, Petitioner's expert expressly confirms this approach, arguing that a person of ordinary skill would supplement one IRHS document with another whenever information is absent or incomplete. See, Ex. 1003 at ¶ 126. But that approach does not identify what any particular publication discloses. It fills disclosure gaps by importing features from different documents that served different purposes and may describe different configurations. As Patent Owner's Expert Dr.

Bowser explains, POSITAs ordinarily identify a specific configuration before drawing conclusions regarding functionality or performance and evaluate complete systems rather than isolated features. Ex. 2006, ¶¶ 28. Petitioner performs neither step.

The Petition cannot identify a single printed publication containing the disclosure upon which Ground 1 depends. Instead, the Petitioner relies upon a reconstructed disclosure assembled from multiple evolving documents. As explained below, that approach leaves the Petitioner unable to identify, with the particularity required by § 312(a)(3) and Rule 42.104(b)(4), the publication that allegedly contains the asserted feature set. Because the same reconstructed IRHS theory supplies teachings throughout Grounds 1-12, this is a global defect.

Third, Petitioner's contemporaneous documents describe IRHS very differently than the Petition does. During the relevant period, Petitioner was actively promoting a specific technological solution to food-quality and hold-time challenges. Petitioner repeatedly highlighted Quartz IR Emitters, InfraRed + HeatSink technology, IR Turbo Boost functionality, pulsed infrared control, and adaptive infrared heating as defining characteristics of the IRHS platform. Petitioner represented that these features produced improved food quality, improved consistency, and extended hold times. Petitioner then commercialized and marketed that architecture to major restaurant chains throughout the same period.

The contemporaneous record also reflects extensive evaluation of competing approaches. Burger King and Patent Owner predecessor Prince Castle evaluated multiple heating technologies and conducted sensory testing, comparative testing, temperature validation, energy testing, and field validation before deployment decisions were made. As Dr. Bowser explains, PHOSITAs commonly evaluate alternative designs through testing and validation because performance objectives cannot reliably be inferred from equipment descriptions alone. Ex. 2006, ¶ 53.

The resulting record reflects a development process in which competing technical approaches were tested, compared, and refined. The record does not reflect a marketplace in which participants viewed those approaches as interchangeable solutions producing predictable results.

These issues affect the Petition at a fundamental level and extend across all asserted grounds. Petitioner's Fortmann-based grounds depend upon prior-art status that has not been established. Petitioner's IRHS grounds depend upon a reconstructed disclosure assembled from multiple evolving documents. Petitioner's own contemporaneous records further describe a technological development process that is difficult to reconcile with the Petition's repeated characterization of the asserted modifications as "routine" substitutions yielding expected results. Institution should therefore be denied.

II. Fortmann Does Not Qualify as Prior Art for the Disclosed Subject Matter

The Petition relies heavily on Fortmann '197 and Fortmann '967. Those references form the basis of Ground 4 and several additional combination grounds. Before the Board can reach Petitioner's obviousness theories, Petitioner must establish that the subject matter it attributes to Fortmann qualifies as prior art.

A. Legal Framework

Section 102(b)(2)(B) excludes subject matter from prior art under 35 U.S.C. § 102(a)(2) when "the subject matter disclosed had, before such subject matter was effectively filed ..., been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor." 35 U.S.C. § 102(b)(2)(B). Petitioner nevertheless treats the relied-upon Fortmann disclosures as somehow automatically available prior art without addressing whether the same subject matter had already been disclosed by Prince Castle's inventors before Fortmann's asserted filing date.

Congress adopted § 102(b)(2)(B) to prevent an inventor's own publicly disclosed subject matter from later being used against the inventor through an intervening patent filing by another. Accordingly, if the subject matter Petitioner relies upon from Fortmann had already been disclosed by the inventors before July 17, 2015, that subject matter is excluded from the prior-art disclosure that Petitioner

seeks to attribute to Fortmann. Grounds built upon that premise necessarily become suspect.

i. Legal Framework

Duke relies upon Fortmann'197 and/or Fortmann'967 in multiple grounds, including Ground 4 and several Fortmann-based combination grounds. Petition at 6-7, Grounds 4, 6, 7, and 9-12.

B. The Record Reflects Inventor-Directed Deployment Before Fortmann's Asserted Filing Date

The chronology begins months before Fortmann's asserted July 17, 2015 filing date. On April 21, 2015, Prince Castle's next-generation food-holding system was installed in Burger King restaurant locations by Prince Castle inventors Kyle Kestner and Charles Hartfelder. See Exs. 2025, 2027. The following day, Prince Castle inventors personally participated in supporting the deployment. See Ex. 2028. The record then reflects continuing dissemination of information concerning the deployed system. On May 12, 2015, Prince Castle distributed the April 2015 DHB-BK24 manual to Burger King personnel in connection with ongoing testing efforts. See Exs. 2029, 2032. On July 8, 2015, Prince Castle inventors (Kester and Lyons) and Burger King personnel jointly disassembled one of the previously installed test units for examination and review. See Ex. 2030.

Only after these events did the Fortmann's provisional filing arrive, which Petitioner identifies July 17, 2015 as the operative filing date. See Paper 1. Viewed

chronologically, the record depicts an inventor-directed public deployment, operation by Burger King and restaurant personnel, ongoing evaluation, and circulation of technical documentation before the date upon which Petitioner's Fortmann-based theories depend.

C. The April 2015 Installations Are the Relevant Disclosure

The relevant event for purposes of § 102(b)(2)(B) is the public disclosure itself. Petitioner relies upon July 17, 2015 as Fortmann's effective filing date. The question presented here is whether the subject matter Petitioner attributes to Fortmann had already been publicly disclosed by the inventors before that date. Notably, the contemporaneous documentation serves an evidentiary function regarding the characteristics and operation of the deployed system.¹

The record reflects that Prince Castle's next-generation food-holding system was installed in operating Burger King restaurants beginning on April 21, 2015. Burger King restaurant personnel subsequently operated and evaluated the installed systems. Contemporaneous technical documentation described the deployed

¹ Duke's IRHS theory elsewhere in the Petition presents a different issue. There, Duke attempts to establish prior-art disclosures by combining teachings drawn from multiple IRHS publications. Section 102(b)(2)(B), by contrast, asks whether the relevant subject matter had already been publicly disclosed before the asserted reference was effectively filed. 35 U.S.C. § 102(b)(2)(B). The April 2015 deployments therefore provide the operative disclosure event, while the contemporaneous documentation provides evidence concerning the characteristics of the deployed system.

configuration and was distributed in connection with additional testing activities.

Those events occurred months before Fortmann's asserted July 17, 2015 filing date.

The remaining question is whether those deployments disclosed the same subject matter Petitioner now attributes to Fortmann. As shown below, they did. The contemporaneous technical materials corroborate that the deployed April 2015 configuration embodied the very subject matter Petitioner now seeks to use through Fortmann. Marmon's Expert, Dr. Bowser, reviewed the April 2015 deployment materials and Rev. A manual and concluded that the documented system reflects a functioning commercial food-holding platform incorporating independent heating zones, programmable temperature control, food-specific settings, calibration procedures, and production-level operational functionality. Ex. 2006, ¶¶ 49-55. In Dr. Bowser's opinion, those characteristics are associated with a deployed commercial food-holding system rather than a conceptual design. *Id.*

Those features are characteristic of a deployed commercial system rather than a conceptual design. See Section II.D, *infra*.

**D. The April 2015 Installations Disclosed the Subject Matter
Petitioner Attributes to Fortmann**

Subject Matter Petitioner Attributes To Fortmann	Petition Citation	April 2015 Deployment / Rev. A Manual
Multiple food- holding zones within a compartment	Ground 9, “Multiple Temperature Zones per Compartment,” pp. 158- 170; Claim 1 analysis pp. 229-230.	Rev. A Manual discloses four temperature-control zones (Zones A-D) and depicts zone architecture. Ex. 2032 at 11. April deployment used DHB-BK24 platform reflected in Rev. A manual.
Independently controllable upper and lower heaters/ Dual Temp functionality	Ground 9, “Independently Controllable Top and Bottom Heaters per Zone,” pp. 170-175; Claim 1 analysis pp. 231-232.	Rev. A Manual discloses separate upper-heater and lower-heater controls and independent upper/lower temperature setpoints. Ex. 2032 at 6. Deployment records confirm Dual Temp functionality was being configured during the April 2015 rollout. Ex. 2026.
Different temperatures for different zones / food products	Ground 9 pp. 236-239.	Rev. A Manual discloses product- specific programming, menu selection, hold-time settings, cook- more settings, and separate heater- temperature settings. Ex. 2032 at 6- 11.
Controller- operated zone management	Ground 9 pp. 173-175; pp. 244-250.	Rev. A Manual discloses programmable control, temperature setting, calibration, menu management, product management, hold-time programming, and day- part programming. Ex. 2032 at 6-10. April deployment emails show integration with PC Minder and Kitchen Minder systems. See Exs. 2025, 2026, 2028.
Individual bay displays and user- interface controls	Ground 1, claim 3 discussion, pp. 75-78.	Rev. A Manual depicts individual displays, timer bars, bay controls, product names, and bay-status indicators. Ex. 2032 at 2-5.

Pass-through access architecture	Ground 1 claims 4/15/23, pp. 78-88.	The Rev. A manual identifies the deployed product family as DHB-BK24AE. The manual explains that the “A” designation indicates auxiliary timer bars on the back of the unit and further states that these model numbers correspond to “double-sided units.” Ex. 2032. Internal investigation further confirms that DHB-BK products were pass-through systems rather than closed-back units.
Insulation between heater systems	Ground 4, pp. 125-129; Ground 9 pp. 212-214, 282-284. Petitioner relies on insulation from Fortmann ’967 and Fortmann ’197.	The Rev. A manual at p. 14 shows an exploded view of the deployed product with a solid rectangular piece of insulation relative to each of the heaters (between (5) – lower panel heater assembly and (14) upper panel heater assembly. See Ex. 2032. The July 15, 2015 Teardown Report identifies that insulation was present: “The insulation was inspected to ensure compliance with BKC heat mitigation and safety standards.” See Ex. 2030 at 4.
Resistive-wire heater structure	Grounds 3, 6, 10. Petitioner relies on resistive-wire heater teachings.	The Rev. A Manual at p. 14 shows an exploded view with resistive-wire heating traces in both (1) top upper panel heater assembly and (14) upper panel heater assembly. See Ex. 2032. The July 15, 2015 Teardown Report identifies resistive-wire structure in the “Heater Assembly Review” portion. See Ex. 2030 at 4.

E. The April 2015 Deployment was a Public Disclosure

The record also reflects that the April 20, 2015 deployment was a public disclosure, involving installation and operation at public Burger King restaurant facilities, with Burger King restaurant personnel participating directly in the deployment process. See Exs. 2025, 2028.

The deployment therefore consisted of more than confidential internal experimentation occurring solely within private Prince Castle or Burger King facilities. The record reflects installation in operating Burger King restaurant locations, participation by Burger King restaurant personnel, and public operation of the system by those personnel.

F. Petitioner Fails to Explain How the Relied-Upon Fortmann Subject Matter Escapes Section 102(b)(2)(B)

The Board need not resolve every factual issue at this stage to recognize the significance of the record. Petitioner's Fortmann-based grounds assume that the subject matter relied upon from Fortmann qualifies as prior art. Yet the record contains evidence of inventor-directed deployment activity, operation by third parties, evaluation by Burger King personnel, and circulation of technical documentation before July 17, 2015. See Exs. 2025, 2027- 2029.

The Petition never evaluates whether the relied-upon subject matter had already been disclosed by the inventors before Fortmann's effective filing date. Because Petitioner's Fortmann-based grounds depend upon that unresolved

predicate issue, at least Grounds 4, 6, 7, and 9-12 fail to establish a reasonable likelihood of prevailing.

III. Petitioner Fails to Establish That the Asserted IRHS Publications Qualify as Prior Art

The Petition treats IRHS as a single, publicly known technology platform. In support, Petitioner points to product demonstrations, trade-show activity, customer deployments, marketing efforts, commercial adoption, and sales activity. Those facts may establish general awareness of the IRHS product. They do not, however, answer the question presented by the printed-publication doctrine.

The deficiencies relating to the IRHS materials extend beyond public accessibility. Under 35 U.S.C. § 312(a)(3), a petition must identify its grounds with particularity. Similarly, 37 C.F.R. § 42.104(b)(4) requires a petitioner to specify where each challenged claim element is found in the prior-art patents or printed publications relied upon. Petitioner never identifies a single IRHS publication containing the feature set upon which its obviousness theories depend. Instead, the Petition assembles teachings from multiple evolving documents and asks the Board to treat the resulting reconstruction as though it were a single disclosure.

A. Public Accessibility Is the Touchstone of the Printed-Publication Inquiry

The Petition relies extensively on four alleged printed publications: 1) IRHS Manual (Ex. 1005); 2) IRHS Specifications (Ex. 1006); 3) Duke Website (Ex. 1007); and 4) IRHS Service Manual (Ex. 1008).

To qualify as prior art, however, Petitioner must show that the particular asserted references were publicly accessible before the critical date. Public accessibility is the touchstone of the printed-publication inquiry. *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016); *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1371-72 (Fed. Cir. 2019). A reference qualifies as a printed publication only where persons interested and ordinarily skilled in the art, exercising reasonable diligence, could locate it. *Blue Calypso*, 815 F.3d at 1348-50. The inquiry therefore focuses on the accessibility of the reference itself, and Petitioner bears that burden for each publication upon which it relies.

B. Petitioner’s Own Evidence Reflects an Evolving Product Family, Yet the Petition Never Identifies When the Relied-Upon Versions Became Publicly Accessible

The Petition repeatedly invokes “the IRHS Documents” as though they collectively describe a single prior-art disclosure. Petition at 8-16; Ex. 1003 ¶¶117-126. Yet Petitioner’s own evidence reflects an evolving product family consisting of prototype systems, production systems, firmware revisions, revised specifications, revised manuals, and different generations of product documentation.

Petitioner expressly distinguished between prototype and production versions of IRHS. In communications regarding testing at Jack in the Box, Petitioner explained that the customer's unit was a "prototype" and separately represented that "full production models are now available." See, Ex. 1033 at 11. The same record reflects continuing firmware development. Petitioner's update materials identify different firmware revisions, including A-08 and A-09 deployments to fielded equipment. Ex. 1032 at 1-5, 34. The Petition also relies upon an operator's manual, specification sheets, website materials, and a service manual that were created for different audiences and purposes. Petition at 12-16. Petitioner's expert, Vallee, expressly acknowledges that the IRHS documents contain different information because they "serve different purposes." Ex. 1003 ¶124. Accordingly, Petitioner's own evidence depicts an evolving platform rather than a single fixed disclosure.

These distinctions matter because Petitioner does not rely upon a single "IRHS Manual" or "IRHS Specification Sheet." Instead, Petitioner mixes and matches particular versions of particular documents. Yet the Petition never identifies when those versions became publicly accessible. Nor does it establish that the specific teachings Petitioner relies upon existed in those versions at the relevant time.

Instead, Petitioner asks the Board to work backwards. Because IRHS products were marketed, sold, demonstrated, and deployed, Petitioner assumes that all of the

associated documentation was publicly accessible as prior art. But the printed-publication inquiry runs in the opposite direction. Petitioner must establish public accessibility of the particular references from which it derives the asserted teachings. It does not do that.

Accordingly, Petitioner has failed to establish that the specific IRHS publications supplying the asserted claim limitations qualify as prior-art printed publications.

C. Petitioner's Website Showing Suffers from the Same Defect

The Petition relies heavily on website evidence. That evidence presents the same problem in a different form. The Federal Circuit's inquiry is whether interested artisans exercising reasonable diligence could locate the asserted reference. *Samsung*, 929 F.3d at 1369-74. In *Samsung*, the Federal Circuit rejected a public-accessibility showing where the record failed to establish that interested artisans could locate the specific reference through reasonable diligence, emphasizing the absence of evidence concerning indexing, searchability, and discoverability of the relied-upon material. 929 F.3d at 1369-74.

Petitioner makes the same omission here. The Petition never establishes how the relied-upon webpages were indexed, organized, or searchable. It does not explain how an interested artisan would have located the specific webpages Petitioner cites. Nor does it establish that those specific webpages existed in the relied-upon form

before the critical date. Instead, Petitioner effectively asks the Board to assume public accessibility from the mere existence of a website and screenshots. Samsung precisely rejects that type of showing. 929 F.3d at 1369-74.

That omission is particularly significant because Petitioner's own continuing changes to the IRHS platform. As noted, Petitioner distinguished between prototype and production systems (Ex. 1033 at 11), deployed multiple firmware revisions, including A-08 and A-09 versions (Ex. 1032 at 1-5, 34), and Petitioner's expert acknowledges that the various IRHS documents served different purposes and contained different information. Ex. 1003 ¶124. Yet the Petition never identifies which version of the website contained the relied-upon teachings, when that version became publicly accessible, or whether the cited webpages existed in the relied-upon form before the critical date.

The accessibility cases require more. The relevant inquiry focuses on the specific reference and the ability of interested artisans to locate that reference through reasonable diligence. Petitioner never makes that showing for the cited website materials. *Blue Calypso*, 815 F.3d at 1348-50; *Samsung*, 929 F.3d at 1369-74.

D. Petitioner Never Establishes Accessibility of the Particular Versions It Relies Upon

Petition repeatedly points to product demonstrations, customer deployments, trade-show activity, marketing efforts, commercial sales, and industry awareness of

IRHS. Petition at 2-4, 12-16; Ex. 1003 ¶¶41-43, 117-126. Those facts may establish awareness of the IRHS platform. The printed-publication inquiry asks a different question. The printed-publication doctrine does not ask whether a product was known in the marketplace. It asks whether the specific references relied upon by the Petition were publicly accessible to interested artisans exercising reasonable diligence. *Blue Calypso*, 815 F.3d at 1348-50; *Samsung*, 929 F.3d at 1369-74.

That distinction is important because the Petition does not rely upon a single IRHS reference. Instead, it relies on a combination of four different publications: the IRHS Manual (Ex. 1005), the IRHS Specifications (Ex. 1006), the Duke Website (Ex. 1007), and the IRHS Service Manual (Ex. 1008). Petition at 12-16. Those documents were created for different purposes and contain different information. Ex. 1003 ¶124. Petitioner then draws different claim limitations from different sources, relying upon some documents for architectural disclosures, others for operational functionality, and still others for implementation details. Petition at 25-94; Ex. 1003 ¶¶134-325.

The problem becomes more significant when viewed against Petitioner's own evidence involving the evolution of the IRHS platform. Petitioner distinguishes between prototype and production systems. Ex. 1033 at 11. Petitioner's records reflect multiple firmware revisions, including A-08 and A-09 deployments. Ex. 1032

at 1-5, 34. And Petitioner's expert acknowledges that the IRHS documents served different purposes and therefore contain different information. Ex. 1003 ¶124.

Those facts create a version-identification problem that the Petition never addresses. Petitioner fails to identify when the particular versions supplying its asserted teachings became publicly accessible. Nor does it establish that the cited teachings existed in those versions before the critical date. Instead, the Petition proceeds as though all IRHS documentation can be treated interchangeably.

The Federal Circuit's printed-publication cases require the opposite approach. Petitioner must establish public accessibility of the specific references from which it derives the asserted teachings and must show that the versions allegedly made available to the public are the same versions supplying those teachings. *Blue Calypso*, 815 F.3d at 1348-50; *Samsung*, 929 F.3d at 1369-74. Petitioner never makes that showing. Accordingly, it has failed to establish that the specific IRHS publications upon which it relies qualify as prior-art printed publications. Because those publications serve as foundational support for Petitioner's IRHS theory, this deficiency affects every ground that depends upon the asserted IRHS documents.

IV. Petitioner Improperly Treats Multiple Printed Publications as a Single Prior-Art Reference

Petitioner's effort to establish IRHS as prior art does not end with public accessibility. Even assuming the IRHS publications qualify as printed publications,

the Petition still must identify the disclosure upon which its obviousness theories depend. It does not.

Instead, Petitioner repeatedly treats multiple publications as though they collectively constitute a single IRHS reference.

A. The Petition Relies Upon Multiple Publications To Supply Different Claim Elements

The Petition does not identify a single IRHS publication containing the asserted feature set. Rather, Petitioner draws different teachings from different sources. The “Vallee Citations” refer to Ex. 1003, Declaration of Glenn Vallee.

Alleged Teaching	Petitioner Source	Petition / Vallee Citation
Quartz IR emitters	IRHS Specifications (Ex. 1006); Duke Website (Ex. 1007)	Petition 31-41; Vallee ¶¶147-148, 221, 231, 243
"Individually controlled IR emitters"	Specification Sheet (Ex. 1006)	Petition 31, 37, 41; Vallee ¶¶146-148, 160
IR Turbo Boost	Ex. 1006; Ex. 1007	Petition 31, 41, 130-131; Vallee ¶¶148, 267-269, 445-459
Product-specific programming and recipe functionality	IRHS Manual (Ex. 1005)	Petition 36-40; Vallee ¶¶146, 174, 177, 183, 257-260
Independent zone control	Ex. 1005, Ex. 1006, Ex. 1007	Petition 36-40; Vallee ¶¶146-163, 173-184, 257-260

Alleged Teaching	Petitioner Source	Petition / Vallee Citation
Wiring architecture / relay logic	Ex. 1005	Petition 41-42; Vallee ¶¶149-163
Controller functionality	Ex. 1005, Ex. 1008	Petition 50-66; Vallee ¶¶291-297, 305-309
Heat sink construction	Ex. 1006, Ex. 1008	Petition 25-26, 52-55; Vallee ¶¶134-137, 312-325
Lower heater structure	Ex. 1008	Petition 91-94; Vallee ¶¶222-223

The chart demonstrates that Petitioner derives different claim limitations from different publications. The Petition fails to identify a single document that discloses the complete collection of teachings upon which Ground 1 depends.

B. Petitioner’s Expert Explicitly and Improperly Endorses Reconstruction

The Petition’s reliance on multiple publications is not accidental. It is a methodology for filling disclosure gaps. When one IRHS document lacks a feature, Vallee proposes importing the feature from a different IRHS document. Ex. 1003 ¶126. Rather than identify a publication containing the asserted feature set, Petitioner constructs one by combining teachings drawn from multiple documents that served different purposes and contained different information. Ex. 1003 ¶124, ¶126.

That is not an explanation of what any particular IRHS publication discloses. It is a methodology for filling disclosure gaps. When one IRHS document lacks a feature, Vallee proposes importing the feature from a different IRHS document. *Id.* Rather than identify a publication containing the asserted feature set, Petitioner constructs one by combining teachings drawn from multiple documents that served different purposes and contained different information. *Id.* at ¶124, ¶126.

Dr. Bowser explains that engineers do not ordinarily identify system functionality by importing features from different manuals, specifications, service documents, firmware revisions, and product generations without first establishing that those materials describe the same configuration. Ex. 2006, ¶ 43. He further explains that POSITAs generally evaluate complete systems rather than isolated features because functionality and performance are assessed in the context of the overall system, including the food product and operating environment. *Id.*, ¶¶ 18-21. Petitioner's supplementation methodology proceeds in the opposite direction by extracting individual features from different documents and recombining them without first identifying the complete system to which those features allegedly belong. Thus, the methodology itself departs from accepted practice. *Id.*

C. Petitioner's Own Evidence Shows the IRHS Documents Do Not Describe a Single Fixed Disclosure

Petitioner's reconstruction problem becomes particularly significant when viewed against its own evidence concerning the evolution of the IRHS platform.

That evidence demonstrates that IRHS was not a single static disclosure. It was an evolving product family consisting of different hardware configurations, different firmware versions, and different forms of documentation. See § III.B.

But the record never establishes that the asserted teachings coexisted within any one particular version of IRHS, and certainly not in one IRHS document. Instead, Petitioner asks the Board to assume that different disclosures spanning prototypes, production units, firmware revisions, service materials, and website content can be treated as though they describe the same thing and may be freely imported into one another. Petitioner performs neither step. Petitioner never identifies the specific configuration allegedly containing the asserted feature set and never establishes that the cited teachings coexisted within that configuration.

Ultimately, Petitioner fails to demonstrate that the relied-upon teachings coexisted within any particular version of IRHS. No effort is made to identify which configuration purportedly included the asserted combination of emitter architecture, controller functionality, product programming, heat-sink structure, and other features attributed to IRHS. Instead, the Petition proceeds as though disclosures spanning prototypes, production units, firmware revisions, service materials, and website content may all be treated as interchangeable.

D. Petitioner Never Identifies a Single IRHS Disclosure Containing the Asserted Feature Set

At the end of the analysis, one question remains: which IRHS disclosure contains the asserted feature set? The Petition never answers that question.

That omission is significant because Petitioner bears the burden of identifying its grounds with particularity. 35 U.S.C. § 312(a)(3). Likewise, Rule 42.104(b)(4) requires Petitioner to specify where each challenged claim element is found in the prior-art patents or printed publications upon which it relies. Petitioner never identifies a single IRHS publication containing the asserted combination of emitter architecture, controller functionality, product-specific programming, zone-control functionality, heat-sink construction, and other features relied upon throughout Ground 1.

Instead, the chart above demonstrates that Petitioner derives different teachings limitations from different publications. Some teachings come from the IRHS Specifications. Others come from the IRHS Manual. Still others come from the Duke Website or the IRHS Service Manual. Petition at 25-94; Ex. 1003 ¶¶134-325. Their expert Vallee then proposes supplementing one document with another whenever information is missing. Ex. 1003 ¶126.

The resulting reconstruction is also inconsistent with the manner in which POSITAs ordinarily evaluate commercial food-holding systems. Dr. Bowser explains that selected features drawn from different models, revisions, manuals,

firmware versions, or configurations are not ordinarily assumed to achieve expected functionality or performance when combined into an unvalidated system. Ex. 2006, ¶¶ 42-43. The Petition nevertheless relies upon precisely that assumption. Dr. Bowser further explains that PHOSITAs evaluate complete systems and specific configurations rather than collections of isolated features. *Id.* The reconstructed IRHS disclosure therefore does not present materially new technological teachings. It repackages previously disclosed concepts through a litigation-created combination of features drawn from multiple documents and configurations.

The asserted disclosure therefore does not appear in Ex. 1005, Ex. 1006, Ex. 1007, or Ex. 1008. It appears only after individual features are extracted from multiple publications and assembled into a litigation-created reconstruction. Petitioner never identifies the publication that allegedly contains the asserted feature set because no such publication has been identified in the record.

The consequence extends far beyond Ground 1. Petitioner repeatedly relies upon the reconstructed IRHS disclosure throughout Grounds 1-12, either as a primary source of teachings or as a source of modification teachings applied to other references.

Accordingly, Petitioner's IRHS-based grounds depend upon a litigation-created composite reference rather than an identified prior-art disclosure. This is not merely an evidentiary problem. It leaves the Petition unable to identify, with the

particularity required by § 312(a)(3) and Rule 42.104(b)(4), the publication that allegedly discloses the asserted feature set. Because the same reconstructed IRHS theory supplies teachings throughout Grounds 1-12, that defect permeates the entire Petition.

V. Petitioner's Reconstructed IRHS Disclosure is Cumulative of References Already Considered by the Examiner During Prosecution of the '002 Patent

The reconstructed IRHS disclosure is a combination of technological features that Petitioner asserts should be treated as a single reference for the purposes of this proceeding. However, those same technological features were already disclosed by Patent Owner and considered by the Examiner during prosecution of the '002 patent. As such, the reconstructed IRHS is technologically indistinguishable from the disclosures already presented to and considered by the USPTO during examination of the '002 patent. Accordingly, the reconstructed IRHS disclosure does not present the Office with materially different prior art. It instead repackages substantially the same IRHS teachings previously considered during prosecution by assembling disclosures from multiple documents into a litigation-created reference. As Dr. Bowser explains, POSITAs do not ordinarily assume that selected features drawn from different models, revisions, or configurations will achieve expected functionality when combined into an unvalidated system. Ex. 2006, ¶¶ 38-43. The Petition therefore presents the same or substantially the same prior art and arguments

previously before the Office, supporting discretionary denial under 35 U.S.C. § 325(d).

A. Petitioner's Patent Filings Disclose Every Material Technical Concept attributed to IRHS

The IRHS Users Manual Ex. 1005 expressly describes the IRHS as “the innovative combination of two proven, patented Duke technologies: InfraRed and HeatSink.” Ex. 1005 p. 4, emphasis added. Thus, from the outset, the reconstructed IRHS disclosure is not positioned necessarily as its own technological advancement, but rather as the commercial implementation of Petitioner's proven, patented technologies. Petitioner's Patent No. 6,175,099 ('099 patent) is directed to a “Holding or Cooking Oven” having a “heat sink which is heated by a heater.” See, Ex. 2035 at Col. 2, L. 3-4. This is the referenced patented HeatSink technology. Petitioner's patent Nos. 7,105,779 ('779 patent, Ex. 2036) and 7,227,102 ('102 patent, Ex. 2037), both entitled “Food Warming Apparatus and Method” represent the referenced patented InfraRed technology. Each of these patents was disclosed during the prosecution of the '002 patent at issue. Ex. 1001 at p. 2.

US Patent Application No. 2014/0130684 ('684 application, Ex. 2038), entitled “Oven with Various Features Including Boost Heating and Preheat Status” combines these patent references and describes their combined operation as was also cited during the '002 prosecution. Ex. 1001 at p. 3. “In one embodiment, the heat source for each heating compartment includes a heat sink of the type described in co-

assigned U.S. Pat. No. 6,175,099 and/or an overhead heater of the type described in co-assigned U.S. Pat. Nos. 7,227,102 and 7,105,779, all of which patents are incorporated herein by reference.” *Id.* at ¶ [0008]. Just as the purported reconstructed IRHS disclosure covers many technologies cobbled by Petitioner’s expert from multiple documents, the disclosure the ’099, ’779, and ’102 patents as explicitly combined in the ’684 application placed this same technological disclosure in front of the Examiner of the ’002 patent for consideration.

Alleged Teaching	Petitioner Source	Cited Prior Art Source
Quartz IR emitters	IRHS Specifications (Ex. 1006); Duke Website (Ex. 1007)	’779 – Fig. 6, Col. 6. L. 40-41; ’102 – Fig. 6, Col. 7 L. 6-7 : “the heat source (designated 146A) is a quartz infrared heat source” ’684 – Fig. 13, [0025] “the upper heat source includes a plurality of infrared emitters 276A-276C such as quartz”
"Individually controlled IR emitters"	Specification Sheet (Ex. 1006)	’779 – Fig. 11, (Col. 9, L. 9-14); ’102 – Fig. 11, (Col. 9, Lns. 35-40): “It is understood that the control mechanism 140 may independently operate the heat sources 146 in the compartments 128, such that the heat source 146 for one compartment may be actuated while the corresponding heat source for another compartment is at a different level of activation or deactivated.”

Alleged Teaching	Petitioner Source	Cited Prior Art Source
		'684 – e.g. [0025] “The plurality of emitters 276A-276C may include emitters which are configured differently for emitting different levels of infrared heat.”
IR Turbo Boost	Ex. 1006; Ex. 1007	'684 – Figs. 8-11, [0019] – [0022], e.g. “the ‘Turbo Boost’ actuator 32, which may be a switch that is operable by an operator of the PHU to modify the heating recipe for a particular heating compartment.”
Product-specific programming and recipe functionality	IRHS Manual (Ex. 1005)	'779 – (Col. 15, L. 27-34) “In one embodiment, the control mechanism 251 is programmed for different types of food, so that after food has been placed in a particular compartment 207, an operator simply selects that type of food from a suitable menu on a display (not shown) on the cabinet. The control mechanism then automatically selects the appropriate heating protocol for the food selected....” '102 – (Col. 10, L. 41-45) “the control mechanism 140 can be programmed so that the operator need only select the type of food to be placed in the compartment and the control mechanism 140 automatically uses preselected settings for that type of food.” '684 – [0007] “The control 10 includes a processor (e.g., a microprocessor), instructions (e.g., software) used by the

Alleged Teaching	Petitioner Source	Cited Prior Art Source
		processor for varying the heat delivered by the heat sources according to predetermined heating recipes suitable for holding different foods in respective heating compartments”; [0020] “The turbo boost executed may be a generic turbo boost used for several of the food types, or the turbo boost (heat/time) may be specific to the particular food being held in the compartment.”
Independent zone control	Ex. 1005, Ex. 1006, Ex. 1007	’779 – Fig. 11, (Col. 9, L. 9-14; <i>accord</i> Col. 16, L. 37-55 and Figs. 24-25): “It is understood that the control mechanism 140 may independently operate the heat sources 146 in the compartments 128, such that the heat source 146 for one compartment may be actuated while the corresponding heat source for another compartment is at a different level of activation or deactivated.” ’102 – (Col. 2, L. 5-8) “ a control mechanism for controlling operation of the heat sources independent of one another whereby the temperature in each compartment may be independently controlled.” ’684 - [0007] “The control 10 includes a processor (e.g., a microprocessor), instructions (e.g., software) used by the processor for varying the heat delivered by the heat sources according to predetermined

Alleged Teaching	Petitioner Source	Cited Prior Art Source
		heating recipes suitable for holding different foods in respective heating compartments”
Wiring architecture / relay logic	Ex. 1005	’684 – Fig. 14, [0026] “FIG. 14 illustrates an electrical schematic of a PHU in which the PHU has a control system 380 including a control 310 and a regulator 370 (e.g., a solid state voltage regulator). The control system 380 is adapted for operative connection to a power source 390 for energizing a heat source 372 and for controlling operation of the heat source, which in the illustrated embodiment is shown as a plurality of infrared heat emitters 372A-372E. The regulator 370 operates to regulate the voltage delivered to the infrared heat emitters 372A-372E to control the amount of infrared heat which they emit.” ’102 – Fig. 11, (Col. 9, L. 16-26) “The control mechanism 140 is used to selectively control the environment, such as the temperature and/or air flow, in each compartment 128 of the oven 101. As will be described more fully hereafter, the control mechanism 140 comprises suitable timer and duty cycle controls to control the length of the duty cycle of each heat source 146, the term “duty cycle” meaning the ratio of heat source on-time to heat source

Alleged Teaching	Petitioner Source	Cited Prior Art Source
		on-time plus heat source off-time. The control mechanism 140 uses a suitable microprocessor and appropriate software to control relays 198 (FIG. 11) that activate the heat sources 146, 170 and 172 and fans 156.”
Controller functionality	Ex. 1005, Ex. 1008	’779 – (Col. 14, L. 41 – Col. 16, Ln. 36) ’102 – Fig. 11, (Col. 9, L. 27-40) “FIG. 11 is a simplified schematic of a portion of one embodiment of an oven control circuit, generally indicated at 196, that is controlled by the control mechanism 140. The circuit 196 operates the heat sources 146 in the multiple compartments 128 of the oven and the heat sources 170, 172 in the upper and lower ducting 160, 162. In the embodiment shown, the control mechanism 140 regulates the heat sources in the oven 101 by energizing conventional relays 198. It is understood that the control mechanism 140 may independently operate the heat sources 146 in the compartments 128, such that the heat source 146 for one compartment may be actuated while the corresponding heat source for another compartment is at a different level of activation or deactivated.” ’684 – [0025] “The variation of the configurations of the emitters 276A-276C provides the controller with a spectrum of temperatures which it may deliver to the

Alleged Teaching	Petitioner Source	Cited Prior Art Source
		food held in the heating compartment 260... This flexibility provides the control with the ability to achieve a desired infrared heat delivery not only by changing duty cycle but also by energizing one or more emitters 276A-276C which are configured to emit different amounts of infrared heat at full duty cycle.”
Heat sink construction	Ex. 1006, Ex. 1008	’099 - (Col. 3, L. 32-36; Col. 4, L. 51-62) “Each heat sink 46 is formed from a substance that conducts heat well, aluminum being preferred. When formed from aluminum, the heat sinks 46 may be produced as extrusions or castings or they may even be produced by machining... Each heat sink 46 is fitted with a heater which may take the form of a flexible heating element 76 of the electrical resistance type. It extends almost the full length of the heat sink 44, covering the flat bottom surface 54 of the bottom wall 50, the corners between the bottom wall 50 and side walls 52, and the flat outside surfaces 60 on the lower regions 58 of the side walls 52. It even curves outwardly along the bottom surfaces of the offsets 68 in the side walls 52. To these surfaces the heating element 76, which is preferably film-etched, is bonded, preferably with a silicone adhesive capable of withstanding the

Alleged Teaching	Petitioner Source	Cited Prior Art Source
		elevated temperatures produced by the heating element 76 .”
Lower heater structure	Ex. 1008	’099 - (Col. 3, L. 32-36; Col. 4, L. 51-62) “Each heat sink 46 is formed from a substance that conducts heat well, aluminum being preferred. When formed from aluminum, the heat sinks 46 may be produced as extrusions or castings or they may even be produced by machining... Each heat sink 46 is fitted with a heater which may take the form of a flexible heating element 76 of the electrical resistance type. It extends almost the full length of the heat sink 44, covering the flat bottom surface 54 of the bottom wall 50, the corners between the bottom wall 50 and side walls 52, and the flat outside surfaces 60 on the lower regions 58 of the side walls 52. It even curves outwardly along the bottom surfaces of the offsets 68 in the side walls 52. To these surfaces the heating element 76, which is preferably film-etched, is bonded, preferably with a silicone adhesive capable of withstanding the elevated temperatures produced by the heating element 76.” ’684 – Fig. 13, [0025] “ the heating compartment 260 includes a lower heat source in the form of a heat sink 264 for heating a bottom and/or sides of a pan 266

Alleged Teaching	Petitioner Source	Cited Prior Art Source
		of food inserted in the heating compartment.”

Accordingly, the record before the examiner of the '002 patent already possessed of every material technological concept of the reconstructed IRHS disclosure through the identified patents, and through their combination in the '684 application, all of which were presented to the Office by the Patent Owner.

B. The '684 Application Combines the Patented Duke Technologies of InfraRed and HeatSink

The '684 application discloses the central technological feature of the reconstructed IRHS disclosure that of the “combination of two proven, patented Duke technologies: InfraRed and HeatSink” (Ex. 1005, emphasis added). The '684 application states “the heating compartment **260** includes a lower heat source in the form of a heat sink **264** for heating a bottom and/or sides of a pan **266** of food inserted in the heating compartment. The heating compartment **260** also includes an upper heat source. In this embodiment, the upper heat source includes a plurality of infrared emitters **276A-276C** such as quartz...” Ex. 2038 at ¶[0025]. Petitioner’s earlier patents directed to the HeatSink and InfraRed technologies provide the technical details, as shown in the chart above. The '684 application then further describes the control and operation of these heat sources “to control the amount of infrared heat

which the emitter emit.” *Id.* at ¶[0026]. The ’684 application provides for a control including a processor and software “for varying the heat delivered by the heat sources according to predetermined heating recipes suitable for holding different foods in respective heating compartments... [t]he heating recipes programmed into the control will vary depend on the type of food to be heated and other factors.” *Id.* at ¶[0007]. Those heating recipes being modifiable by way of a “Turbo Boost” feature to “to energize the heating source(s)... to deliver an increased amount of heat to the food.” *Id.* at ¶[0019].

Accordingly, the ’684 application, which was already considered during prosecution of the ’002 patent, provides the technological disclosure of the combination of features that Petitioner attributes to the reconstructed IRHS disclosure.

C. The reconstructed IRHS Disclosure is Cumulative of the Art of Record

Through the citation of Petitioner’s own patent filings during the prosecution of the ’002 patent the material technological concepts of the reconstructed IRHS disclosure were already before the Examiner. Petitioner’s citation of the reconstructed IRHS disclosure fails to add any meaningful technological information to the record.

The references cited by the Patent Owner during prosecution of the ’002 patent already disclosed: (1) HeatSink heating structures (the ’099 patent), (2)

infrared heating, independently controlled compartments, and food-specific heating protocols (the '779 and '102 patents), and (3) the integrated PHU control architecture including timers, displays, recipes, preheat functions, and boost modes (the '684 application). The reconstructed IRHS disclosure merely documents Petitioner's commercial implementation technologies already before the Office and does not present materially different technological teachings.

Accordingly, the reconstructed IRHS disclosure is cumulative of the IRHS teachings previously before the Office. Petitioner fails to identify any materially different prior-art disclosure and instead reconstructs substantially the same teachings from multiple evolving documents. The failure to identify materially different prior art is significant because Petitioner's obviousness theories depend upon the reconstructed IRHS disclosure as a principal source of teachings. Having failed to identify materially different prior art or material error by the Office, Petitioner cannot rely on § 325(d)-barred theories to satisfy its burden for institution. Because the Petition relies upon the same or substantially the same prior art and arguments previously presented to the Office, and fails to demonstrate that the Office materially erred in evaluating those teachings, the Board should exercise its discretion and deny institution under 35 U.S.C. § 325(d).

VI. Petitioner's Obviousness Analysis Is Inconsistent With Accepted Practice in the Art of the '002 Patent

Petitioner's reconstruction theory reflects a broader methodological problem that extends throughout the Petition. Petitioner's expert, Vallee, generally describes a POSITA as an engineer possessing an engineering degree and/or several years of experience in the design or manufacture of foodservice equipment. Ex. 1003 ¶29. Patent Owner does not dispute that a POSITA would possess education or experience relating to the design or manufacture of foodservice equipment. Patent Owner's disagreement concerns the incompleteness of that definition.

Patent Owner's disagreement concerns both the incompleteness of Vallee's definition and the resulting methodology it employs. As Dr. Bowser explains, a POSITA responsible for designing and evaluating commercial food-holding equipment would require sufficient familiarity with food quality, food safety, sensory analysis, and applicable industry standards to evaluate whether a food-holding system achieves its intended objectives. Ex. 2006, ¶30-33. Such a POSITA would evaluate competing food-holding technologies through the lens of observed performance, testing, validation, food-quality outcomes, and engineering judgment rather than merely by comparing isolated design features reflected in technical documents. *Id.*

A. Petitioner's Methodology Assumes The Desired Result

Throughout his declaration, Vallee repeatedly identifies individual features from different references, asserts that those features could be combined, and then concludes that the resulting systems would have predictably achieved the desired result. See, e.g., Ex. 1003 ¶¶36, 125-126, 348-358, 575-605. Yet the declaration fails to analyze how the resulting systems would actually have performed with respect to food quality, food safety, moisture retention, temperature consistency, hold-time performance, or other operational objectives that a POSITA would normally evaluate. Instead, expected performance is assumed from architectural descriptions.

Dr. Bowser explains that food-holding performance frequently depends on multiple interacting variables, including heat-transfer behavior, moisture retention, controller operation, food composition, hold duration, and operating temperatures. Ex. 2006, ¶¶ 11, 47. Because those variables interact, engineers commonly use testing, measurement, and validation to determine how systems actually perform under operating conditions. *Id.* Measured performance, not architectural description alone, ordinarily provides the basis for engineering conclusions regarding food-holding systems. *Id.*, ¶ 46.

B. Vallee Evaluates Features in Isolation Rather Than Complete Systems

Throughout its obviousness analysis, Petitioner repeatedly extracts individual features from the asserted references and treats them as interchangeable design

options that may be freely combined whenever similar functions can be identified. See, e.g. Ex. 1003 ¶36. Petitioner then evaluates those features individually rather than considering the complete systems in which they operate. *Id.*

Petitioner evaluates individual features rather than complete systems. The resulting analysis assumes that expected performance follows once similar components have been identified and combined. As Dr. Bowser explains, POSITAs ordinarily evaluate complete systems because performance is assessed in the context of the interaction among the equipment, the food product, and the operating environment. Ex. 2006, ¶18. Petitioner performs no such analysis.

C. The Petition Explains What a POSITA Could Do Rather Than Why a POSITA Would Do It

A recurring theme throughout the Petition is that a POSITA *could* have adopted a particular feature, *could* have modified a particular system, or *could* have combined teachings drawn from multiple references. The Petition rarely addresses a different question that lies at the heart of obviousness analysis: *why* a POSITA would have selected Petitioner's particular modifications when other alternatives existed and *why* that a POSITA would have expected the resulting system to achieve the desired performance objectives. See Ex. 1003 ¶¶348-58, 575-605, 681-724, 980-89.

The Petition repeatedly explains how modifications could potentially be implemented. It rarely explains why a POSITA would have selected those

modifications when alternative approaches existed or why the resulting systems would have been expected to achieve the desired performance objectives. As Dr. Bowser explains, apparently reasonable alternatives frequently exist in food-holding-system design, and a preferred alternative is often identified only after performance has been evaluated through testing, validation, observation, or a combination of those methods. Ex. 2006, ¶ 26. The Petition skips that step.

VII. Petitioner's Contemporaneous Documents Describe IRHS as a Specific Technological Solution

Petitioner's obviousness theories treat IRHS primarily as a source of individual teachings that may be extracted and combined with other references. Indeed, Vallee extracts individual architectural features and treats them as interchangeable teachings that may be separated from the underlying system. But Petitioner's contemporaneous documents describe IRHS as an integrated thermal-management system. They repeatedly attribute performance to the combined InfraRed + HeatSink architecture and explain how those components function together. Those documents present IRHS as a specific technological solution to food-quality, consistency, and hold-time problems.

As Dr. Bowser explains, POSITAs ordinarily evaluate complete systems and their ability to achieve food-quality, food-safety, consistency, and hold-time objectives rather than isolated equipment features viewed independently. Ex. 2006,

¶¶ 18-21. Duke’s contemporaneous documents repeatedly discuss those same performance objectives when describing the IRHS platform.

A. Petitioner Repeatedly Identified Quartz Infrared Technology as a Defining Feature of IRHS

As of 2013-2015, Petitioner consistently promoted IRHS as a holding system built around infrared technology. The IRHS specification sheet identifies “Dual technology heating” and explains that “[i]ndividually controlled IR emitters pulse on and off” to control energy delivered to food. Ex. 1033 at 3-4. The same document highlights “IR Turbo Boost” functionality. Ex. 1033 at 3-4. Petitioner’s marketing materials similarly identify “Quartz IR Emitters” as a primary feature of the IRHS platform. Ex. 1033 at 15-16; Ex. 1035 at 5. The operator manual describes IRHS as combining Petitioner’s InfraRed and HeatSink technologies and attributes improved performance to that combination. Ex. 1032 at 9.

Across Petitioner’s contemporaneous materials, quartz emitters, infrared energy delivery, pulsed control, and Turbo Boost functionality appear repeatedly. The record therefore presents infrared technology as a defining feature of IRHS rather than an incidental implementation detail.

B. Petitioner Tied Improved Food Quality and Hold-Time Performance to the InfraRed + HeatSink Architecture

Petitioner’s documents also explain why it believed IRHS performed differently from prior systems. The IRHS operator manual states “[e]xtended hold

times with improved food quality and consistency were achieved through the innovative combination of two proven, patented Duke technologies: InfraRed and HeatSink.” Ex. 1032 at 9. The same manual explains that IRHS permits product-specific environmental control and provides the ability to maintain desired sensory characteristics at extended hold times. Ex. 1032 at 9.

Petitioner made similar statements to prospective customers. In communications with Jonathan Biggs at Dunkin’, Petitioner explained that IRHS extends hold times while preserving “just cooked” product quality by adjusting the holding environment throughout the hold cycle. Petitioner further attributed that performance to operation of the top IR emitters “[b]y adapting the top IR emitters to the food product's changing stage, we can put the food in the best hold environment for the entire hold time.” Ex. 1033 at 100.

These statements show that Petitioner repeatedly tied improved food quality, consistency, and hold-time performance to particular aspects of the IRHS architecture, including the infrared emitter system itself. Those are precisely the types of performance objectives that Dr. Bowser explains POSITAs ordinarily evaluate when analyzing commercial food-holding systems. Ex. 2006, ¶ 22.

C. Petitioner Built the IRHS Platform Around Infrared Components

The technical documents reflect the same emphasis. The operator manual contains dedicated sections addressing “IR Bulb Function” and “IR Bulb Circuit

Fault.” Ex. 1032 at 20. The parts documentation identifies IR emitters, emitter sockets, IR glass frames, emitter harnesses, replacement IR bulbs, and related components. Ex. 1032 at 25-32.

Those materials demonstrate that infrared functionality was integrated throughout the IRHS design. The record therefore reflects a system built around IR emitters, IR-specific circuitry, IR diagnostics, and IR replacement components. Ex. 1032 at 20-32; Ex. 1033 at 15-16.

D. Petitioner Commercialized IRHS as Its Preferred Holding Platform

The record reflects active promotion of IRHS to major restaurant chains, including Wawa, Jack in the Box, Dunkin’, Dairy Queen, and Whataburger. Ex. 1033 at 2-16, 100-103, 122-124, 136-140, 160-163; Ex. 1035 at 5. Petitioner marketed IRHS through customer demonstrations, trade-show activity, direct sales efforts, and targeted communications. Ex. 1033; Ex. 1035.

The contemporaneous record therefore reflects a company investing in, promoting, and commercializing a specific technological approach to food-holding performance.

E. Petitioner’s Contemporary Descriptions of IRHS Matter

The Petition largely treats IRHS as a repository of individual teachings concerning temperature control, programmable operation, heating zones, and food-product management. The contemporaneous record tells a more complete story.

Petitioner repeatedly represented that IRHS achieved its performance advantages through Quartz IR Emitters, pulsed infrared control, IR Turbo Boost functionality, and the combined InfraRed + HeatSink architecture. Ex. 1032 at 9; Ex. 1033 at 3-4, 15-16, 100; Ex. 1035 at 5. Those same documents reflect Petitioner's effort to commercialize and differentiate that architecture in the marketplace. Ex. 1033; Ex. 1035.

Dr. Bowser explains that POSITAs evaluate complete systems rather than isolated features because food-holding performance is ultimately assessed based on interaction among the equipment, the food product, and the operating environment. Ex. 2006, ¶ 27. In his opinion, the architectural features repeatedly highlighted in Duke's contemporaneous materials were elements of a broader thermal-management strategy directed toward achieving identified food-quality, consistency, and hold-time objectives. *Id.*

The record therefore reflects that Petitioner spent years developing, marketing, and commercializing a specific architectural solution to the very food-quality, consistency, and hold-time challenges addressed by the challenged claims.

VIII. Burger King Treated Competing Holding Architectures as Technologies Requiring Validation

Contemporaneous Burger King and Prince Castle records reveal how industry participants evaluated competing holding technologies before making deployment decisions. As Dr. Bowser explains, PHOSITAs commonly evaluate apparently

reasonable alternatives through testing, measurement, and validation because performance outcomes frequently cannot be established from design descriptions alone. Ex. 2006, ¶ 11. Those records show a process of testing, comparison, and validation before broader deployment occurred.

A. Burger King and Prince Castle Considered Multiple Candidate Architectures

In 2014, as it began efforts on product improvements that would later be claimed in the '002 patent, Prince Castle identified several alternative approaches to extended-hold food warming, including rope/mica heaters, infrared heater panels, and quartz tube heaters. See Ex. 2022. The proposal materials identify separate advantages and disadvantages associated with each approach. They also report that both the infrared-heater-panel approach and the quartz-tube-heater approach had completed “No sensory evaluation (0/13).” *Id.* The same materials report that the rope/mica-heater approach was already approved for extended hold on eleven of thirteen menu items.

The documents therefore reflect a process in which multiple technical approaches to the same operational problems were analyzed and compared before selection of a preferred design.

B. Burger King Required Sensory Testing Before Advancing to Field Validation

The evaluation process continued into 2015. In January 2015, Prince Castle advised Burger King that its second-generation PHU had “officially passed all BK equipment team sensory tests and is approved to move into field validation.” See, Ex. 2023. The same communication reported completion of energy testing and temperature validation. *Id.*

Contemporaneous testing materials further show that Burger King compared Prince Castle’s second-generation PHU against both first-generation and second-generation (IRHS) Duke holding units. See Ex. 2024. Those comparisons formed part of the approval process that ultimately resulted in authorization for field validation.

C. Performance Was Measured Through Comparative Testing

The record also reflects the use of structured sensory testing. For example, Prince Castle conducted triangle-test analyses comparing products held in Duke equipment with products held in Prince Castle equipment. See Ex. 2031. The testing evaluated whether differences in food quality could be perceived by participants and formed part of Burger King’s broader evaluation process.

The January 2015 materials similarly reflect comparative testing, sensory evaluation, temperature validation, energy testing, and field-validation planning. See Exs. 2023, 2024.

D. The Contemporaneous Record Reflects Evaluation Not Assumption of Interchangeability

By early 2015, Burger King had before it multiple approaches to food holding. Some approaches had already achieved approval on portions of the menu, while others remained under evaluation. See Ex. 2022.

The record reflects that deployment decisions were preceded by testing, comparison, and validation. Prince Castle's second-generation PHU was not advanced directly to field deployment. Rather, Burger King required sensory testing, energy testing, temperature validation, and ultimately field validation before broader adoption was considered. See Exs. 2023, 2024.

As Dr. Bowser explains, POSITAs commonly compare alternatives through testing and validation before selecting a preferred design because multiple alternatives may appear technically reasonable before performance is measured. *Id.*, ¶ 29.

IX. Petitioner Fails to Explain Why a POSITA Would Depart from the IRHS Architecture

A. Petitioner's Contemporaneous Materials Present IRHS as a Purpose-Built Solution

As discussed in Section VI, Petitioner's contemporaneous materials repeatedly attributed the performance of IRHS to particular architectural choices, including Quartz IR Emitters, InfraRed + HeatSink technology, adaptive infrared control, pulsed infrared operation, and IR Turbo Boost functionality. For example,

Petitioner represented that “[e]xtended hold times with improved food quality and consistency were achieved through the innovative combination of two proven, patented Duke technologies: InfraRed and HeatSink.” Ex. 1032 at 9. Petitioner's technical and marketing materials likewise highlighted Quartz IR Emitters, pulsed infrared control, adaptive infrared operation, and IR Turbo Boost functionality as defining aspects of the IRHS platform. Ex. 1032 at 9; Ex. 1033 at 3-4, 15-16; Ex. 1035 at 5.

Petitioner made similar representations to prospective customers. In communications regarding Dunkin’, Petitioner explained that IRHS maintained product quality throughout the hold cycle by adapting the operation of the top infrared emitters to the condition of the food product. Ex. 1033 at 100.

Taken together, Petitioner’s own materials repeatedly connect improved food quality, improved consistency, and extended hold times to identifiable architectural features of the IRHS system. Petitioner’s contemporaneous documents therefore portray IRHS as a deliberate technological approach to the same operational problems addressed by the challenged claims.

B. The Petition Extracts Teachings from IRHS Without Addressing Petitioner’s Contemporaneous Explanations

The Petition treats IRHS as a repository of individual teachings concerning heaters, controllers, programming functionality, zone control, and food-management

features. It does not meaningfully address Petitioner's contemporaneous explanation of how IRHS achieved its asserted performance objectives.

The Petition fails to provide any explanation for why a POSITA would have expected the proposed modifications to preserve the performance characteristics Petitioner contemporaneously attributed to IRHS. As such, the Petition extracts individual teachings from the reconstructed IRHS disclosure but never addresses why a person of ordinary skill seeking the very benefits Petitioner identified would have been motivated to move away from the architectural features Petitioner contemporaneously credited for producing those benefits. The Petition cites those features as teachings. It does not explain why a POSITA would have modified, discarded, or replaced them.

Dr. Bowser further explains that engineering capability and engineering performance are different questions. Ex. 2006, ¶ 17-18. The existence of a capability, such as independent heater control or temperature control, does not itself establish how a system will perform with respect to food quality, moisture retention, texture, hold-time performance, or other operational objectives. *Id.* Those outcomes are ordinarily evaluated through testing and validation.

C. Petitioner Leaves a Critical Gap in Its Obviousness Theory

Petitioner's failure to explain why a POSITA would have modified or departed from the architectural features that Petitioner itself promoted as responsible

for the performance of IRHS is significant. Petitioner's own materials portray infrared emitters, adaptive infrared control, IR Turbo Boost functionality, and the combined InfraRed + HeatSink architecture as central to achieving improved food quality, consistency, and extended hold times. Ex. 1032 at 9; Ex. 1033 at 100; Ex. 1035 at 5.

The Petition therefore leaves unanswered an essential question raised by the contemporaneous record - why would a POSITA seeking those same benefits have been motivated to depart from the architecture Petitioner was simultaneously promoting as the solution to those problems? Petitioner never provides that explanation. As a result, Petitioner's obviousness theories contain a material gap that extends throughout its IRHS-based grounds.

X. Petitioner's Obviousness Theories Rely on Conclusory Assertions Rather Than Technical Reasoning

A. Petitioner Primarily Relies on Generalized Assertions of Predictability

A recurring theme throughout the Petition is Petitioner's characterization of the asserted modifications as "routine," "predictable," or within the ordinary skill of the art. See Paper 1. Those assertions state Petitioner's conclusion. They do not provide the analysis necessary to reach that conclusion.

Obviousness requires more than identifying individual teachings in the prior art and labeling their combination predictable. The Petition must explain why a

POSITA would have selected the particular modifications Petitioner proposes and why that POSITA would have expected those modifications to achieve the desired result. The Petition repeatedly supplies the former while assuming the latter.

Much of Vallee's analysis explains how the proposed modifications could be implemented and why they are technically possible. See, e.g., Ex. 1003 ¶¶125-126, 348-358, 575-605. What is largely absent is an explanation of why a POSITA would have selected those particular modifications when alternative approaches existed, or why the resulting systems would have been expected to preserve the performance objectives Petitioner contemporaneously attributed to IRHS. Instead, the Petition frequently moves from the identification of individual features to the conclusion that the resulting combination would predictably achieve the desired result. Ex. 1003 ¶36. That conclusion assumes the very point requiring proof. As Dr. Bowser explains, measured performance ordinarily provides a more reliable basis for evaluating food-holding systems than expectations derived solely from design descriptions or component selections. Ex. 2006, ¶ 27.

B. Petitioner's Analysis Assumes the Desired Result

Ground 9 illustrates the recurring methodology employed throughout the Petition. Petitioner identifies a claimed feature, locates a similar teaching somewhere within the asserted references, and then concludes that combining or modifying those teachings would have been routine.

What is missing is an explanation of the technical decision-making process that would have led a POSITA to Petitioner's proposed combination. The Petition rarely addresses why one technical approach would have been selected over available alternatives. And it fails to explain why the proposed modifications would have been expected to preserve or improve performance characteristics associated with the underlying systems.

Instead, the Petition often treats the existence of individual teachings as sufficient justification for combining them. The result is an analysis that identifies pieces of the puzzle without explaining why a skilled artisan would have assembled those particular pieces in the manner Petitioner proposes.

C. Ground 9 Illustrates the Petition's Methodological Defects

Ground 9 provides perhaps the clearest example of the methodology employed throughout the Petition. There, Petitioner begins with Fortmann '748 and then successively imports teachings from the reconstructed IRHS disclosure, Jones, Fortmann '197, Fortmann '967, McMillan, Vaseloff, Hartfelder, and Shei '099. Ex. 1003 ¶¶538-1020.

At each step, Petitioner identifies a feature, locates a similar feature elsewhere in the asserted art, and then concludes that the proposed modification would have been routine or predictable. See, e.g., Ex. 1003 ¶¶575-605, 677-724, 772-784, 973-990. The analysis repeatedly explains how individual modifications could be

implemented. What is largely absent is an explanation of why a POSITA would have selected those particular modifications when alternative approaches existed or why the resulting system would have been expected to preserve the performance objectives associated with the underlying technologies. Ground 9 instead proceeds by assuming that if individual features can be identified and combined, expected performance necessarily follows. Dr. Bowser explains that POSITAs do not ordinarily assume that selected features drawn from different revisions, models, or configurations will achieve expected performance when combined into an unvalidated system. Ex. 2006, ¶ 18.

D. Petitioner Fails to Bridge the Gap Between Its Technical Premises and Its Conclusions

The contemporaneous record developed above establishes two important points. First, Petitioner repeatedly attributed the performance of IRHS to specific architectural features, including Quartz IR Emitters, InfraRed + HeatSink technology, pulsed infrared control, adaptive emitter operation, and IR Turbo Boost functionality. Ex. 1032 at 9; Ex. 1033 at 3-4, 100; Ex. 1035 at 5. Second, Petitioner's obviousness theories repeatedly rely on a reconstructed IRHS disclosure assembled from multiple publications. See Sections III-IV, *supra*.

The Petition nevertheless concludes that the asserted modifications would have been routine and predictable. What is missing is the reasoning that connects those premises to that conclusion.

The Petition identifies references and individual teachings. It repeatedly invokes predictability. The Petition does not, however, provide the technical reasoning connecting those references, teachings, and conclusions. It does not evaluate those teachings as part of complete systems directed toward identified food-performance objectives, and it fails to explain why a POSITA would have modified or departed from the architectural features Petitioner itself contemporaneously described as responsible for IRHS's performance. Nor does it explain why a POSITA would have expected the resulting system to achieve the same performance benefits after making those modifications.

That omission is significant. Petitioner's own materials portray the IRHS architecture as a deliberate solution to food-quality, consistency, and hold-time challenges. The Petition therefore requires some explanation for why a skilled artisan would have altered the very features Petitioner attributed to those benefits while still expecting the modified system to achieve the same objectives.

The Petition never supplies that explanation. Instead, it repeatedly moves from the existence of individual teachings to the conclusion that the asserted modifications would have been predictable. The conclusion appears throughout the Petition. The intervening technical reasoning does not.

Accordingly, Petitioner's IRHS-based grounds leave a material motivation-to-modify question unanswered.

XI. The Petition's Defects Recur Throughout the Asserted Grounds

The deficiencies identified above are not confined to any one ground. Rather, the same defects occur throughout the Petition:

Grounds	Recurring Defect
Grounds 4, 6, 7, and 9-12	Depend upon Fortmann subject matter that Petitioner assumes qualifies as prior art without addressing the evidence that the same subject matter had already been disclosed before Fortmann's effective filing date.
Grounds 1-12	Depend upon a reconstructed IRHS disclosure assembled from multiple evolving publications, manuals, specifications, service materials, and website content.
Grounds 1-12	Depend upon Vallee's supplementation methodology, which imports features from one IRHS document into another whenever information is absent or incomplete. Ex. 1003 ¶126.
IRHS-based Grounds	Treat Petitioner's contemporaneously described thermal architecture as a collection of independent teachings without addressing Petitioner's own explanations regarding how that architecture achieved its asserted performance objectives.
IRHS-based Grounds	Evaluates isolated features and capabilities without addressing whether the resulting systems would have achieved the food-quality, food-safety, consistency, and hold-time objectives attributed to the underlying technologies.
IRHS-based Grounds	Fails to explain how modifications could be implemented without explaining why a POSITA would have selected those modifications or expected them to preserve the performance objectives contemporaneously attributed to IRHS.

XII. CONCLUSION

Petitioner's challenge depends on prior-art status that has not been established, a reconstructed IRHS disclosure that does not appear in any identified publication, and obviousness theories that repeatedly assume the desired result

without supplying the technical reasoning necessary to reach it. The Petition further relies on prior-art teachings and arguments that are cumulative of those already considered by the Office.

Because Petitioner has failed to establish a reasonable likelihood of prevailing with respect to any challenged claim, and because discretionary denial is additionally warranted under 35 U.S.C. § 325(d), Patent Owner respectfully requests that the Board deny institution of inter partes review in its entirety.

Date: October 6, 2026

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CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this **PATENT OWNER'S PRELIMINARY RESPONSE** complies with the type-volume limits set forth in the Memorandum and 37 C.F.R. § 42.24 because it contains 11,091 words, excluding the parts of the Brief that are exempted by 37 C.F.R. § 42.24(a), according to the word processing system used to prepare this Brief.

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CERTIFICATE OF SERVICE

I hereby certify that on October 6, 2026, I electronically filed the foregoing using the Patent Trial and Appeal Case Tracking System (P-TACTS) and served an email copy upon counsel of record for Petitioner, as follows:

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