

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.

Petitioner,

v.

UMBRA TECHNOLOGIES LTD.

Patent Owner.

Case No. IPR2024-00344

U.S. Patent No. 11,146,632

PATENT OWNER'S DEMONSTRATIVES

PETITIONER
Cisco Systems, Inc.,

v.

PATENT OWNER
UMBRA Technologies Ltd.

U.S. Patent No. 11,146,632

Inter Partes Review No.: IPR2024-00344

Patent Owner UMBRA's Trial Presentation

April 22, 2025

- **Background**
- **Petitioner’s “Agarwala” Amalgamation Is Not Prior Art for Two Independent Reasons**
- **The Preamble Should Be Construed As Limiting**

- **Background**
- **Petitioner’s “Agarwala” Amalgamation Is Not Prior Art for Two Independent Reasons**
- **The Preamble Should Be Construed As Limiting**

Background of UMBRA U.S. Patent 11,146,632 (“the ’632 patent”)

- The claimed inventions of the ’632 patent resulted from the pioneering efforts of Mr. Joseph Rubenstein in the 2010s in areas such as slingshot interconnection systems for sending files utilizing a data beacon (“DB”)
- The improvements overcame limitations such as needing to packetize and send data over next-hop routing
- The improvements resolved, for example, problems related to congestion, inefficiency, reliability and speed when utilizing TCP/IP and UDP/IP protocols over long distances (See Ex. 1001, the ’632 patent, at 5:20-32.)

- **Background**
- **Petitioner's "Agarwala" Amalgamation Is Not Prior Art for Two Independent Reasons**
- **The Preamble Should Be Construed As Limiting**

Petitioner's Only Challenges Are Based on the Combined Disclosures of the Agarwala Provisional and Patent (Via Alleged Incorporation by Reference)

- Petitioner's only challenges are based on a *combination* of content in the Agarwala '685 provisional and the Agarwala '421 patent. (See Paper 24, PO Response, at 5 and 8; Paper 1, Petition, at 18.)
- In its Reply, Petitioner reiterates that its challenge requires *combining* the Agarwala '685 provisional disclosure with the Agarwala '421 patent:

“The Petition makes this clear by asserting a single ground of obviousness over Agarwala which is defined *as the combined* disclosure of EX-1005 (the '421 Patent) and EX-1004 (the '685 Provisional Application.)”

(Paper 25, Reply, at 2.)

Incorporation by Reference Is Not Effective If Not Specific

- Petitioner ignores the Federal Circuit’s guidance in *Advanced Display Sys. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000):
 - According to *Advanced Display*, an attempt to incorporate material by reference does not suffice if it fails to “*identify with detailed particularity what **specific** material it incorporates and clearly indicate **where** that material is found in the various documents.*” *Id.* at 1282. (See Paper 26, PO Sur-reply, at 3-4.)
- Thus, the Agarwala ’421 patent’s generic one-line attempt to incorporate by reference all cancelled disclosures of the unpublished Agarwala ’685 provisional did not suffice for purposes of 35 USC § 102(a)(2). (See Paper 26, PO Sur-Reply, at 4.)

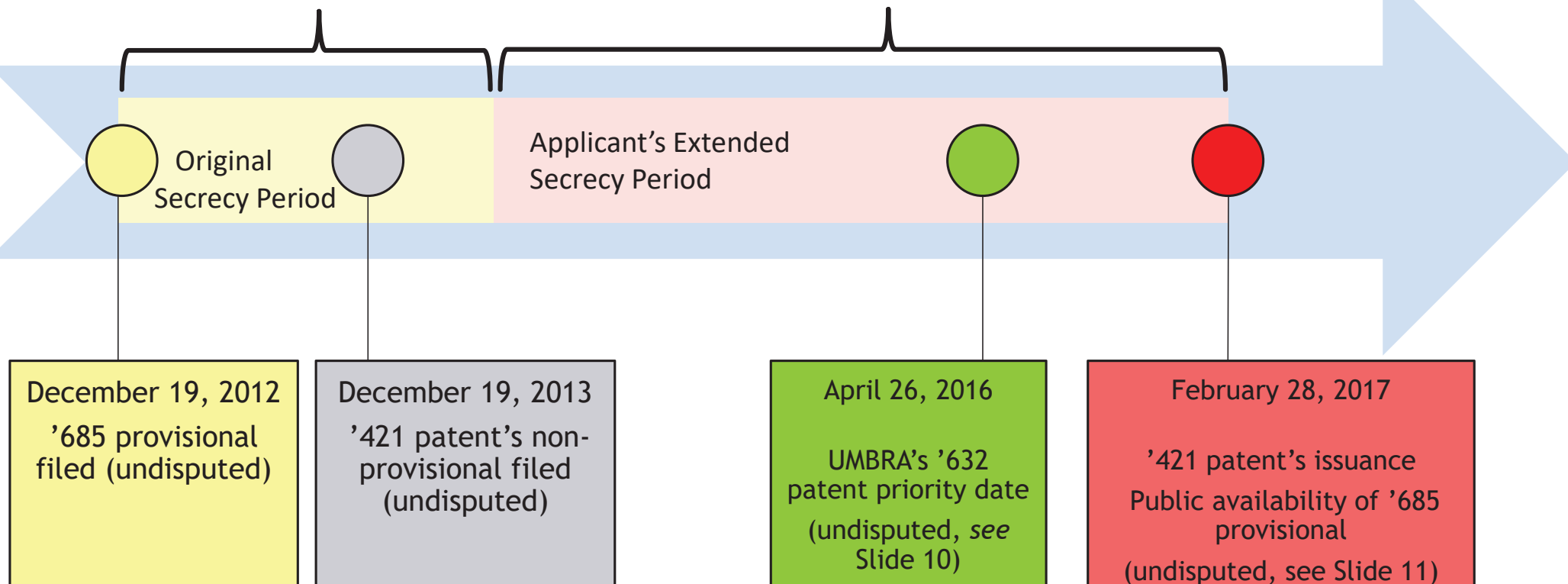
Incorporation by Reference Is Not Effective If Not Specific

- *Advanced Display* also cites to *In re Lund* for the “holding that ***a one sentence reference to an abandoned application is not sufficient to incorporate material from the abandoned application into a new application.***” *Advanced Display Sys. v. Kent State Univ.*, 212 F.3d 1272, 1283 (Fed. Cir. 2000) (citing *Lund*, 376 F.2d at 989)
- In *Lund*, an examiner attempted to combine a continuation-in-part child application with matter from an abandoned parent application that had not been carried forward. The court explained that if the abandoned material was meant to be incorporated, this should have been explicitly stated. *Lund*, 376 F.2d 1370-71.
- Similarly, the Agarwala non-provisional child included only ***a one sentence reference*** to the provisional, ***abandoned*** most of the provisional’s material, and ***claimed a different invention.***

The Agarwala Provisional Includes “essential relied on teachings” That Were Intentionally Kept Secret Until Well After the ’632 Patent Priority Date

Normal secrecy period = 18 months
See 35 U.S.C. § 122(b)(1)(A)

Added secrecy resulting from non-publication request in
Agarwala’s non-provisional application. (See Ex. 2013 at 11.)



DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

It is Undisputed that the '632 Patent Is Entitled to a Priority Date of April 26, 2016

- The '632 patent is entitled to the priority date of the three provisional applications to which the '632 patent claims priority, as listed on the face of the '632 patent: 62/327,907, 62/327,846, and 62/327,911 (“UMBRA Provisionals”), each filed on April 26, 2016. (See Paper 24, PO Response, at 5; Ex. 2011 at ¶ 30.)
- A chart demonstrating that each of the challenged claims of the '632 patent is fully supported by the subject matter disclosed in the UMBRA Provisionals is attached to the Expert Declaration of Micah Beck, filed in support of this Response. (See Paper 24, PO Response, at 5; Ex. 2012.)
- *The Petition does not dispute that the '632 patent is entitled to the priority date of Provisional Application No. 62/327,907, filed April 26, 2016. (See Pet. at 11.)*
- Thus, the undisputed priority date of the '632 patent is April 26, 2016.

The Content of the '685 Provisional Was Not Made Public Until the Issuance of the '421 Patent on **February 28, 2017**

- *It is undisputed that the contents of the Agarwala '685 provisional—including the cancelled subject matter—were not publicly available until **February 28, 2017**, the date of issuance of the Agarwala '421 patent. (See Paper 24, PO Response, at 6; Paper 26, Sur-reply, at 15-16.)*
- A non-publication request filed with the Agarwala non-provisional prevented publication of the Agarwala non-provisional prior to issuance of the '421 patent.

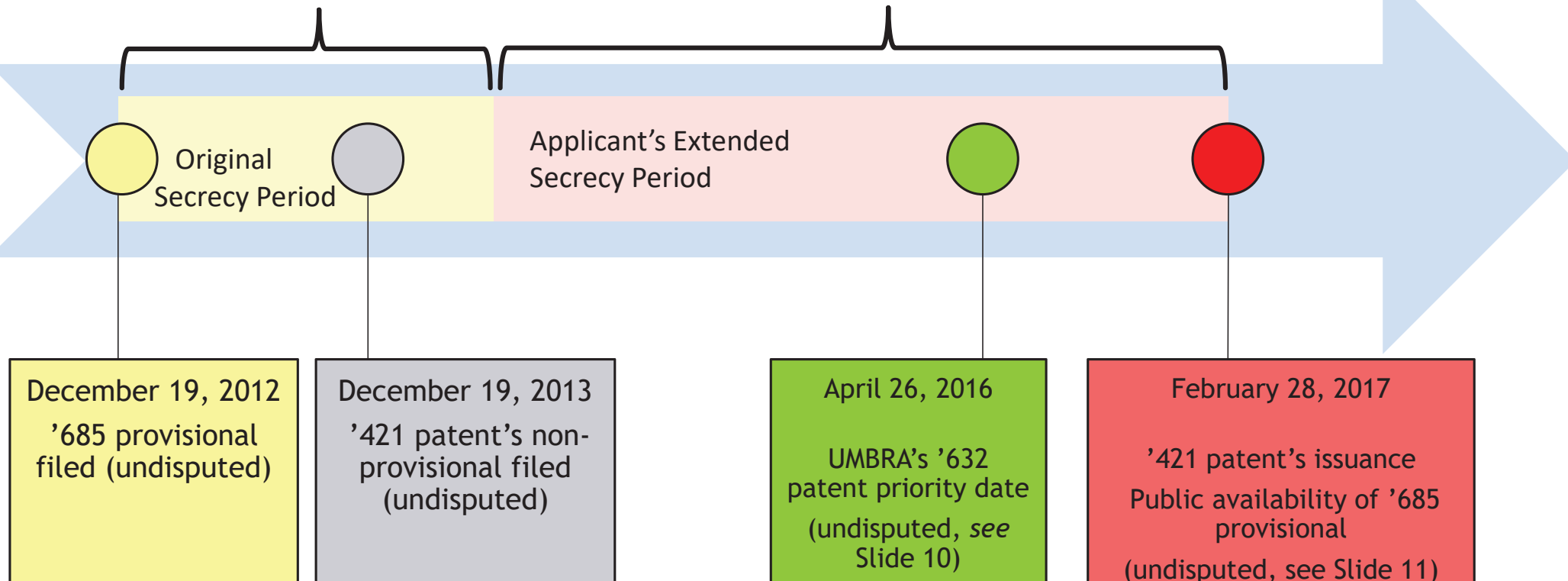
Publication Information:	
☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☒	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

(See Ex. 2013 at 11; *see also*, Paper 26, Sur-reply, at 2.)

The Agarwala Provisional Includes “essential relied on teachings” That Were Intentionally Kept Secret Until Well After the ’632 Patent Priority Date

Normal secrecy period = 18 months
See 35 U.S.C. § 122(b)(1)(A)

Added secrecy resulting from non-publication request in
Agarwala’s non-provisional application. (See Ex. 2013, at 11.)



DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Federal Circuit Case Law Confirms that the Asserted Combination Cannot Invalidate a Patent Having a Priority Date Before the Provisional Was Public

- According to the Federal Circuit in *Venkat Konda v. Flex Logix Techs., Inc.*, 2022 U.S. App. LEXIS 12248, at *2 (Fed. Cir. May 6, 2022), *whether a later patent's incorporation by reference of cancelled matter from an earlier provisional may constitute prior art turns on "whether the provisional application (containing essential relied-on teachings) was public"* as of the critical date at issue. (See Paper 26, Sur-reply, at 14-15 (addressing *Venkat Konda*).)
- There are thus two questions:
 - Whether material from the provisional is "*essential relied-on teachings*"
 - Whether the material from the provisional was *public* as of the critical date

Federal Circuit Case Law Confirms that the Asserted Combination Cannot Invalidate a Patent Having a Priority Date Before the Provisional Was Public

- According to the Federal Circuit in *Venkat Konda v. Flex Logix Techs., Inc.*, 2022 U.S. App. LEXIS 12248, at *2 (Fed. Cir. May 6, 2022), *whether a later patent's incorporation by reference of cancelled matter from an earlier provisional may constitute prior art turns on "whether the provisional application (containing essential relied-on teachings) was public"* as of the critical date at issue. (See Paper 26, Sur-reply, at 14-15 (addressing *Venkat Konda*).)
- There are thus two questions:
 - Whether material from the provisional is "*essential relied-on teachings*"
 - Whether the material from the provisional was *public* as of the critical date

Question 1: The '421 Patent (Absent the Agarwala Provisional Disclosure) Is Never Alleged to Anticipate the Challenged Claims

- Petitioner's only challenge is based on a ***combination*** of disparate content between the Agarwala '685 provisional and the Agarwala '421 patent. (See Paper 24, PO Response, at 5 and 8; Paper 1, Petition, at 18.)
- In its Reply, Petitioner reiterates that its challenge requires ***combining*** the Agarwala '421 patent with the Agarwala '685 provisional:

“The Petition makes this clear by asserting a single ground of obviousness over Agarwala which is defined ***as the combined*** disclosure of EX-1005 (the '421 Patent) and EX-1004 (the '685 Provisional Application.)”

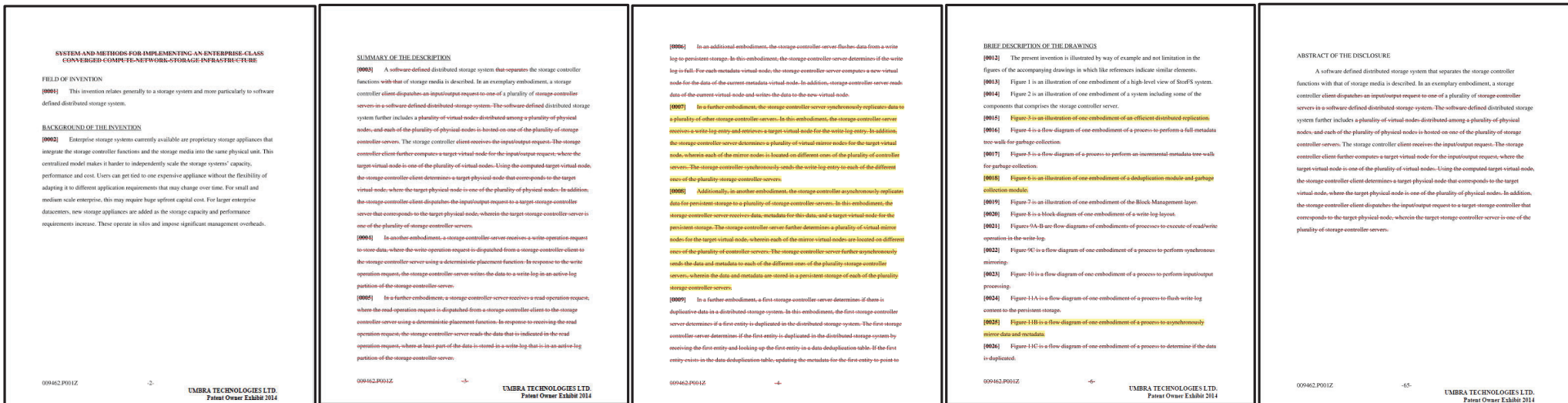
(Paper 25, Reply, at 2.)

Question 1: Material from the Agarwala Provisional Constitutes “essential relied-on teachings” Under *Venkat*

- A vast majority of the paragraphs of the '685 provisional were cancelled with the nonprovisional filing for the '421 patent. (See Ex. 2014 (strikethrough at ¶¶ 0003-0010, 0015-0030, 0037-0046 and 0053-00126); *see also*, EX-1004 compared to Ex-1005.)
- The only common figures between the '685 provisional and the '421 patent are Figures 1 and 2, neither of which is relied upon by Petitioner for anticipation. (EX-1004 compared to Ex-1005; *see also*, Ex. 2011 at ¶ 43.)
- The specification of the '685 provisional contains over 20,000 words, while the specification of the '421 patent contains less than 10,000 words, most different. (EX-1004 compared to Ex-1005; *see also*, Paper 24, PO Response, at 6.)

Question 1: Material from the Agarwala Provisional Constitutes “essential relied-on teachings” Under *Venkat*

- Petitioner relies on cancelled content from the Agarwala '685 provisional, as shown in Ex. 2014**, a markup of the '685 provisional with red strikethrough on cancelled matter and yellow highlights on matter relied on in the Petition (all of which was omitted). These are just a few excerpted pages from Ex. 2014:



DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

(See Ex. 2014)

Question 1: Material from the Agarwala Provisional Constitutes “essential relied-on teachings” Under *Venkat*

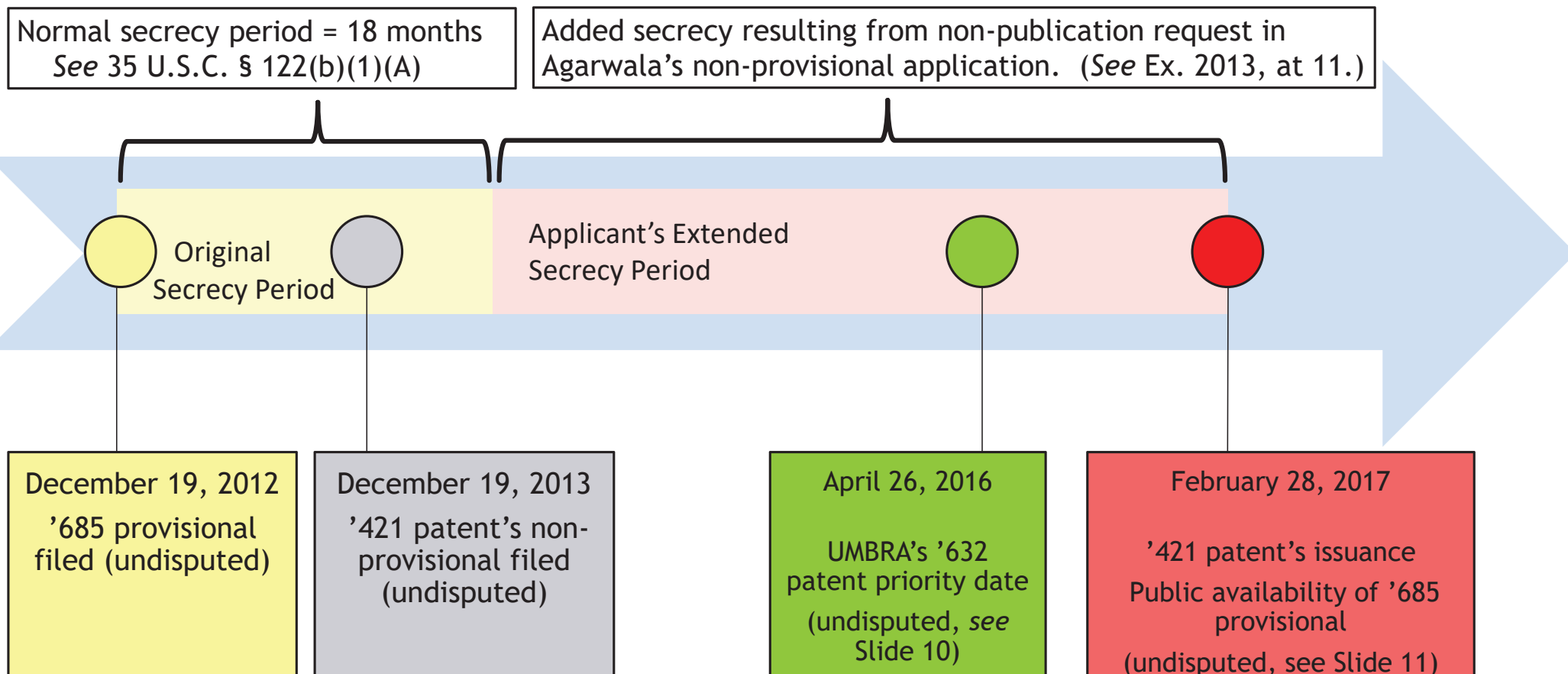
- Petitioner offers no citations to the Agarwala '421 patent for at least one element of all asserted claims.
- Specifically, the Petition cites only to Ex-1004 ('685 provisional) and does not cite to Ex-1005 ('421 patent) when addressing:
 - element [1.3] of claim 1 (the only independent claim of the '632 patent),
 - claim 5,
 - claim 6, and
 - element [7.1] of claim 7.

(See Paper 1, Pet., at 44-47 (element [1.3]), 54 (claim 5), 55-56 (claim 6), 57-59 (element [7.1]); see also, Paper 24, PO Response, at 12-13.)

Federal Circuit Case Law Confirms that the Asserted Combination Cannot Invalidate a Patent Having a Priority Date Before the Provisional Was Public

- According to the Federal Circuit in *Venkat Konda v. Flex Logix Techs., Inc.*, 2022 U.S. App. LEXIS 12248, at *2 (Fed. Cir. May 6, 2022), *whether a later patent's incorporation by reference of cancelled matter from an earlier provisional may constitute prior art turns on "whether the provisional application (containing essential relied-on teachings) was public"* as of the critical date at issue. (See Paper 26, Sur-reply, at 14-15 (addressing *Venkat Konda*).)
- There are thus two questions:
 - Whether material from the provisional is "*essential relied-on teachings*"
 - Whether the material from the provisional was *public* as of the critical date

Question 2: The “essential relied on teachings” From the Agarwala Provisional Were Kept Secret Until Well After the '632 Patent Priority Date



DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Issue 2: Petitioner Fails to Address M.P.E.P. Guidance on Cancellation

- Patent Owner also cites M.P.E.P. § 901.01 and § 2127(II)(A) for the proposition that matter cancelled from an application cannot be relied upon as an invalidating reference as of the filing date of the application under 35 U.S.C. § 102(a)(2). (See PO Response, Paper 24, at 7-8.)
- Petitioner's Reply does not address either of these M.P.E.P. subsections. Instead, the Reply mentions § 2127(I), which addresses “abandoned applications.” (See Pet Reply, Paper 25, at 5.)
- Canceled matter in the application file of a U.S. patent or U.S. application publication is not a proper reference as of the filing date under 35 U.S.C. 102(a)(2) or pre-AIA 35 U.S.C. 102(e). (See M.P.E.P. § 901.01.)

- **Background**
- **Petitioner’s “Agarwala” Amalgamation Is Not Prior Art for Two Independent Reasons**
- **The Preamble Should Be Construed As Limiting**

The Preamble (re: “data beacons”) Is Limiting

“A network system for providing *data beacons*, comprising:

- a first node comprising a first read queue, a first write queue, and a first parallel file system;

- a second node comprising a second read queue, a second write queue, and a second parallel file system;

- wherein the first node writes first data from the first write queue to the second parallel file system; and

- wherein the second node reads the first data from the second parallel file system and places the first data in the second read queue.”

(See Ex. 1001 at 23:2-12.)

Federal Circuit's Guidance in *Loctite* Confirms the Impact of Prosecution History on Claim Construction

- The Board's institution decision ignored the Federal Circuit's *Loctite* guidance on claim construction, as quoted by Patent Owner:

*“The district court, however, was **influenced**—and so are we—**by statements made during prosecution** of the '012 patent.”*

(Paper 6, POPR, at 7 (quoting *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 867 (Fed. Cir. 1985)).)

The Board Selectively Applied the Federal Circuit's Guidance in *Catalina* in Determining Whether the Preamble Is Limiting

- The Board quotes the Federal Circuit's guidance in *Catalina* for the proposition that:
“[A] preamble is not limiting ‘where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.’”

(Paper 14, Inst. Dec., at (quoting *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801 (Fed. Cir. 2002)).)
- However, the Board ignores this critical guidance from *Catalina* on alternative scenarios that make the preamble limiting:
“Moreover, **clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define**, in part, **the claimed invention**. . . . Without such reliance, however, a preamble generally is not limiting when the claim body describes a structurally complete invention”

Catalina, at 808-009.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

The Preamble (Including “data beacon”) Is limiting Because the Examiner Relied on “data beacon” to Find the Claims Patentable

- During prosecution, the Examiner provided a detailed statement of reasons for allowance indicating reliance on the preamble to distinguish the claimed invention from the prior art, which began as follows:

EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance:

The application filed on October 23, 2018 is eligible for a First Action Allowance due to the novelty of the claimed subject matter. Both East and InnovationQ Plus IP.com software for both patents and non-patent literature were used in the prior art searches. Although independent Claim 1 appears at first to be somewhat non-complex subject matter, it was found to be novel in the art. Examiner was unable to find any prior art references that teach the subject matter, which recites as follows:

(Ex. 1002 at 9.)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

The Preamble (Including “data beacon”) Is limiting Because the Examiner Relied on “data beacon” to Find the Claims Patentable

- The Examiner’s stated reasons for allowance included an explanation that *the term “data beacon pulser” was searched because it was viewed as “the technology upon which the invention is based”*:

In addition, a search for the term “data beacon pulser,” which is disclosed in the specification as the technology upon which the invention is based, was not found in any prior art other than that of the inventor. A broader search for “data beacon” in the same

(Ex. 1002 at 10.)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

The Preamble (Including “data beacon”) Is limiting Because the Examiner Relied on “data beacon” to Find the Claims Patentable

- The Examiner’s reasons for allowance further stated that the term “*data beacon*” alone was searched without finding invalidating prior art:

prior art other than that of the inventor. A broader search for “data beacon” in the same paragraph as variations of the term “pulse” yielded the reference, Crinon et al. (US 20120196646 A1) and related references by the same inventors. However, those references deal with mobile networks, and do not disclose any information about read queues, write queues, or parallel file systems. Examiner also reviewed the prior art references provided as being relevant in the PCT International Search Report, but did not find that the references teach the claimed subject matter with the required level of specificity.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

(Ex. 1002 at 10.)

The '632 Patent Title and Characterization of “the invention” Also Refer Specifically to “data beacon” or “data beacon pulsers”

- The Board’s construction also failed to consider that the title of the ’632 patent is:
“**Data Beacon Pulser(s)** Powered by Information Slingshot”
- Additionally, the ‘*Background of the Invention*’ section of the ’632 patent explains:
“The present disclosure relates generally to networks, and more particularly, to the topology, configuration and operation of a **data beacon pulser (DBP)**.”
Ex. 1001 at 1:29-31.
“**The invention** overcomes the distance issues associated with TCP/IP and UDP/IP because the underlying protocol of Slingshot powering **DBP** does not have the same congestion and inefficiencies problems over distance. . . .
Data Beacon Pulser addresses this by offering reliability and speed superior to UDP/IP and TCP/IP over distance.”
Ex. 1001 at 5:21-32.

Petitioner Offers No Evidence of “data beacon” in the Agarwala Prior Art

- Petitioner offers **zero evidence** that the “data beacon” element of the challenged claims is present within either the Agarwala provisional or the '421 patent
- Petitioner’s only allusion to disclosure is an unsupported, handwaving assertion that the descriptions of the '632 patent and Agarwala are somehow “*parallel*”:

The Petition describes that Agarwala includes a parallel disclosure to that of the '632 Patent in that it is directed to the same problem and provided the same solution as the '632 Patent, the only difference being that Agarwala uses different words to described the identical concepts described and claimed in the '632 Patent.

(Paper 10, Pet. Reply to POPR, at 4.)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Thank You

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was served on April 21, 2025, in its entirety by filing this document through the Patent Trial and Appeal Case Tracking System (P-TACTS) as well as providing a courtesy copy via e-mail to the following attorneys of record for the Petitioner listed below:

LEAD COUNSEL	BACKUP COUNSEL
Patrick D. McPherson DUANE MORRIS LLP 901 New York Ave N.W. Suite 700 East Washington, DC 20001 Tel: 202-776-5214 PDMcPherson@duanemorris.com	Patrick Muldoon Joseph Powers DUANE MORRIS LLP 901 New York Avenue N.W. Suite 700 East Washington, DC 20001 Tel: 202-776-5214 PCMuldoon@duanemorris.com JAPowers@duanemorris.com

/s/ James Lennon
James Lennon