

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

WSOU INVESTMENTS LLC d/b/a
BRAZOS LICENSING AND
DEVELOPMENT,

Plaintiff,

v.

CISCO SYSTEMS, INC.,

Defendant.

C.A. No. 2:24-cv-00332-JRG

DEFENDANT'S INVALIDITY CONTENTIONS

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Pursuant to the Local Patent Rule 3-3, Defendant Cisco Systems, Inc. (“Cisco”) provides its Invalidity Contentions.

I. INTRODUCTION

On July 15, 2024,¹ Plaintiff WSOU Investments LLC d/b/a Brazos Licensing and Development (“Brazos”) served its Preliminary Infringement Contentions (“Infringement Contentions”) and asserted the following claims:

- U.S. Patent No. 7,386,630 (“’630 patent”): Claims 18, 22, and 23;
- U.S. Patent No. 8,498,286 (“’286 patent”): Claims 3 and 7;
- U.S. Patent No. 8,441,721 (“’721 patent”): Claims 1, 2, 4, 6, 19 and 21;
- U.S. Patent No. 8,982,691 (“’691 patent”): Claims 1–10; and
- U.S. Patent No. 9,450,884 (“’884 patent”): Claims 1, 11, 17, and 20.

(collectively, the “Asserted Patents” or “Patents-in-Suit” and the “Asserted Claims”). Cisco contends that each of the Asserted Claims are ineligible subject matter under 35 U.S.C. § 101, and that each of the Asserted Claims is invalid under at least 35 U.S.C. §§ 102, 103, and/or 112.

These Invalidity Contentions address the claims identified in Brazos’s Infringement Contentions. Defendant reserves the right to modify, amend, or supplement these Invalidity Contentions to the extent the Court permits Brazos to amend, supplement, or otherwise modify its Infringement Contentions, including by modifying the claims asserted, and to the full extent permitted by the Local Patent Rules.

Further, Brazos’s Infringement Contentions are deficient and fail to provide allegations as to how the accused products infringe each and every claim limitation; rather, they simply parrot

¹ Brazos submitted revised preliminary infringement contentions on July 25, 2024, adding bates numbers to its contentions.

the claim language and then cite various documents—and in some circumstances, point to no evidence at all. Brazos therefore has prejudiced Defendant’s ability to understand, for purposes of preparing these Invalidity Contentions, what Brazos alleges to be the scope of the Asserted Claims. Defendant reserves the right to amend these Invalidity Contentions if and when Brazos provides proper infringement contentions as to each Asserted Claim.

Nothing in these Invalidity Contentions is intended, nor should be construed, as waiver of any claim construction argument or noninfringement position. Defendant’s statements herein (including the accompanying charts) reflect Defendant’s understanding of the purported potential scope of the claims that Brazos appears to be advocating in its Infringement Contentions. Defendant’s statements herein are not to be construed as acquiescence to Brazos’s interpretation of any claims or claim terms. Defendant disagrees that any such claim scope is proper.

Nothing herein shall be interpreted as an admission that: (1) the Asserted Claims are infringed by any of Defendant’s products or services; (2) any particular feature or aspect of any of the accused instrumentalities practices any limitation of the Asserted Claims, (3) there is 35 U.S.C. § 112 support for any limitation of the Asserted Claims, or (4) any of Brazos’s proposed or implied constructions are supportable.

A. Priority Date

These Invalidity Contentions are based on the earliest priority dates as identified by Brazos in its Infringement Contentions. Nothing in these Invalidity Contentions shall be understood as an agreement that any Asserted Patent is entitled to claim priority to the dates identified by Brazos, or to any continuation-in-part, provisional, or foreign priority document. Defendant reserves the right to amend these Invalidity Contentions and identify additional prior art references if Brazos is permitted by the Court to later assert an earlier priority date, or is permitted by the Court to later produce documents purporting to evidence earlier conception and reduction to practice.

Any reference to an “asserted priority date” in these Invalidity Contentions refers to the priority dates identified in Brazos’s Infringement Contentions. Reference to a “priority date” or an “asserted priority date” should not be construed to mean that Defendant agrees that any of the Asserted Patents are in fact entitled to such priority date, or that Brazos has provided proper notice as to its contentions for a priority date.² To the extent Brazos alleges that any prior art relied on in these Invalidity Contentions does not actually qualify as prior art to an Asserted Patent, Defendant reserves the right to rebut those allegations (*e.g.*, by demonstrating an earlier critical date for the challenged prior art and/or a later priority date for a particular Asserted Patent and/or Asserted Claim).³ Likewise, to the extent Brazos successfully establishes an invention date before any of the prior art references relied on by Defendant, those references serve as evidence of secondary considerations of obviousness, in particular, contemporaneous invention by others.

Asserted Patent	Asserted Priority Date⁴
'630 patent	November 21, 2003
'286 patent	January 10, 2011
'721 patent	December 30, 2009
'691 patent	September 28, 2012
'884 patent	June 11, 2014

B. Claim Construction

Defendant’s Invalidity Contentions are based on (1) Defendant’s present understanding of the Asserted Claims, and (2) the claim constructions Brazos appears to be using based on the

² Defendant reserves the right to rely on additional documents, evidence, and expert testimony, including, without limitation, the documents cited in Brazos’s Infringement Contentions, in the event that Brazos fails to establish that any Asserted Claim of any Asserted Patent is entitled to its Asserted Priority Date.

³ Defendant reserves the right to rely on additional documents and evidence to rebut any efforts by Brazos to allege any reference was not publicly available or otherwise available as prior art.

⁴ These asserted priority dates are based on the dates identified in Brazos’s Objections and Responses to Defendant’s First Set of Interrogatories, dated September 9, 2024 (Interrogatory No. 1).

Infringement Contentions, all without regard to whether Defendant agrees with Brazos's apparent or expressed claim constructions. Defendant reserves the right to supplement or otherwise amend these Invalidity Contentions in response to any court-ordered clarifications on claim constructions, any report from any expert witness for Brazos regarding the scope of the claims, any briefing filed by Brazos relating to the scope of the claims, and any position taken by Brazos concerning claim scope, infringement, or invalidity.

In the respective invalidity charts, Defendant identified terms that it contends are governed by 35 U.S.C. § 112 ¶ 6. Defendant otherwise takes no position on any matter of claim construction in these Invalidity Contentions, including whether any particular claim element should be construed according to 35 U.S.C. § 112 ¶ 6. If Defendant's disclosures herein are consistent with any explicit, apparent, or implied claim constructions in Brazos's Infringement Contentions, no inference is intended and no inference should be drawn that Defendant agrees with any of Brazos's claim constructions. Any statement herein describing or tending to describe any claim element is provided solely for the purpose of understanding and/or applying the cited prior art. In addition, to the extent that these Invalidity Contentions rely on or otherwise embody a particular order in which the steps of method claims are performed, Defendant does not necessarily propose that the method claims must be limited to such order, although Defendant may later propose such an order.

Nothing herein should be read to suggest that Defendant agrees that any particular claim term is sufficiently definite, enabled, or supported by the written description to meet the requirements of 35 U.S.C. § 112. Likewise, nothing herein should be read to suggest that Defendant agrees that the preamble of any claim is or is not limiting.

Because any positions taken in these disclosures are based on the claim scope apparently asserted by Brazos in its Infringement Contentions, with which Defendant may disagree,

Defendant may take positions with respect to claim construction issues that are inconsistent with, or even contradictory to, positions expressed or implied in these Invalidity Contentions.

Prior art not included in these Invalidity Contentions, whether or not now known to Defendant, might become relevant depending on the claim constructions proposed by Defendant and/or the Court's claim construction rulings. Defendant reserves all rights to supplement or modify the positions and information in these Invalidity Contentions, including, without limitation, the prior art and grounds of invalidity set forth herein, after the Court has construed any term of the Asserted Claims.

C. Ongoing Discovery and Supplementation

Defendant bases these Invalidity Contentions on its current knowledge and understanding of the Asserted Patents, Brazos's Infringement Contentions, and other facts and information available as of the date of these contentions. Defendant's investigation into prior art—including prior art identified in these disclosures, third-party prior art (including system art and related evidence), documents, and knowledgeable witnesses—is ongoing.⁵ Furthermore, Defendant anticipates seeking and obtaining discovery, including third-party discovery, that further evidences and supports the invalidity of the Asserted Claims. Thus, Defendant expects to present additional information and evidence in support of its Invalidity Contentions, and to revise, amend, and/or

⁵ Defendant's future efforts include but are not limited to: serving subpoenas on prior artists and inventors regarding prior art, seeking additional information related to the references and systems disclosed in these Invalidity Contentions, and seeking additional information related to available prior art systems, as well as Brazos's Infringement Contentions and the products accused of infringing therein. No depositions have been taken as of this time, including, without limitation, depositions of any inventors, authors, or entities listed on any references or systems identified in these Invalidity Contentions. Further, Defendant reserves the right to review and supplement these Invalidity Contentions with respect to any additional prior art that becomes apparent as discovery proceeds.

supplement these Invalidity Contentions accordingly in a manner consistent with the Federal Rules of Civil Procedure and the Court's rules and applicable orders.

Furthermore, Defendant is investigating and pursuing information from additional sources of discovery that may bear on prior art and other invalidity bases, and may serve discovery requests on those sources if necessary. Defendant reserves the right to revise, amend, and/or supplement these Invalidity Contentions with any relevant information obtained from those additional sources.

Defendant further reserves the right to rely on statements or admissions from those owing a duty of candor, such as the named inventor, prosecution counsel, and others involved in the prosecution of the patent applications or related applications, concerning the scope of the prior art relevant to the Asserted Patents found in, *inter alia*, the following: the respective prosecution histories of the Asserted Patents and related patent applications; deposition testimony of the named inventors; and the papers filed and any evidence submitted by Brazos in connection with this litigation.

Prior art not identified in this disclosure, whether known or not known to Defendant, may become relevant, including prior art concerning the state of the art at the time of invention, as well as simultaneous or near-simultaneous independent invention by others. For instance, Defendant currently is unaware of the extent, if any, to which Brazos will contend that limitations of the Asserted Claims are not disclosed in the prior art identified by Defendant. To the extent that such an issue arises, Defendant reserves the right to identify other references that would disclose, practice, or render obvious the allegedly missing limitation(s) of the disclosed subject matter.

D. Prior Art Identification and Citations Thereto

In these Invalidity Contentions, Defendant identifies specific portions of prior art references that disclose the elements of the Asserted Claims. While Defendant has identified exemplary prior art references for each element, Defendant does not necessarily identify every

disclosure of the same element in each prior art reference. A person of ordinary skill in the art would read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field and would rely upon other information, including other publications and general scientific or engineering knowledge. Defendant therefore reserves the right to rely upon other unidentified portions of the prior art references and on other publications and prior art products and expert testimony to provide context and to aid in the understanding and interpretation of the identified portions of the prior art.

Defendant also reserves the right to rely upon (1) other portions of the cited prior art references, other publications, prior art products, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including on the basis of modifying or combining certain cited references; (2) admissions relating to prior art in the Asserted Patents or related patents, the prosecution history of the Asserted Patents or related patents, or other admissions obtained during discovery; (3) foreign counterparts of any U.S. patents identified in Defendant's Invalidity Contentions; and (4) any prior art references, other publications, prior art products, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art used during any reexamination, *inter partes* review, post-grant review, or any other proceeding at the Patent Office involving the Asserted Patents. Where a prior art reference includes citations to other references, those other references are considered incorporated by reference for context.

The references discussed in the claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently, and/or they may be relied upon to show the state of the art in the relevant time frame. The suggested obviousness combinations are provided in the alternative

to Defendant's anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not by itself anticipatory.

Where Defendant identifies in the claim charts a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure as well as any text relating to the figure in the specification and prosecution history in addition to the figure itself. Similarly, where an identified portion of text refers to a figure or other material, the identification should be understood to include the referenced figure or other material as well.

E. No Patentable Weight

Defendant reserves the right to argue that various portions of the Asserted Claims, such as an intended use or result, nonfunctional descriptive material, and certain preamble language, are entitled to no patentable weight. Mapping of a portion of an Asserted Claim to a prior art reference does not represent that such portion of the claim is entitled to patentable weight when comparing the claimed subject matter to the prior art.

Nothing herein should be read to suggest that Defendant agrees that any particular claim term is sufficiently definite, enabled, or supported by the written description to meet the requirements of 35 U.S.C. § 112. In addition, nothing herein admits in any way that any of Defendant's accused products infringe any of the Asserted Claims. Defendant reserves the right to amend and supplement these Invalidity Contentions, including in response to any amendments to, and revisions of, Brazos's Infringement Contentions or application of the Asserted Claims. Defendant further reserves the right to supplement its corresponding document production should they later find additional, responsive documents.

II. INVALIDITY UNDER 35 U.S.C. §§ 102 AND 103

Defendant contends that the Asserted Claims are invalid as anticipated by the prior art under 35 U.S.C. § 102 and/or as obvious in view of the prior art, the knowledge of a person having ordinary skill in the art, and/or secondary factors of obviousness under 35 U.S.C. § 103.

The obviousness combinations of references provided in Defendant's invalidity claim charts under 35 U.S.C. § 103 are exemplary and are not intended to be exhaustive. In particular, Defendant is currently unaware of the extent, if any, to which Brazos will contend that limitations of the Asserted Claims are not disclosed in the art identified by Defendant as anticipatory. To the extent an issue arises with any such limitation, Defendant will identify other obviousness combinations and/or other references that would have made obvious the addition of the allegedly missing limitation to the disclosed device, system, or method of operation.

Defendant reserves the right to present additional items of prior art under 35 U.S.C. § 102 and/or 35 U.S.C. § 103 located during the course of discovery or further investigation. For example, Defendant expects to issue subpoenas to third parties believed to have knowledge, documentation, and/or corroborating evidence concerning some of the prior art listed below and/or additional prior art. These third parties include without limitation the authors, inventors, or assignees of the references listed in these disclosures. In addition, Defendant reserves the right to assert invalidity under other subsections of 35 U.S.C. § 102 to the extent that discovery or further investigation yields information forming the basis for such invalidity.

A patentee bears the burden of production with respect to evidence of secondary considerations of nonobviousness. *ZUP, LLC v. Nash Mfg., Inc.*, 896 F.3d 1365, 1373 (Fed. Cir. 2018). As of the date of these Invalidity Contentions, Brazos has not identified any evidence of secondary considerations, nor does Brazos offer any evidence or explanation to support its allegations. As shown in these Invalidity Contentions, other companies and individuals described,

built, and/or patented the exact same concepts in the Asserted Patents before Brazos ever did—often many years before. Even where others’ invention(s) occurred around the same time as the Asserted Patents, such simultaneous invention demonstrates the obviousness of the Asserted Patents.

Potentially relevant evidence includes any prior art reference cited herein that was publicly known or available before or around the alleged inventions claimed in the Asserted Patents. This also includes any prior art asserted in these Invalidity Contentions that Brazos is able to pre-date based on its asserted priority dates by proving, *inter alia*, corroborated conception and diligent reduction to practice.

Defendant reserves all rights to further respond to any secondary considerations of nonobviousness raised by Brazos, including by updating, modifying, and/or adding to these Invalidity Contentions. Defendant is not aware of any unexpected results, long-felt need, commercial success (or any nexus to any allegedly successful commercial embodiment), or awards for the alleged inventions of the Asserted Patents.

A. State of the Art

The subject matter of the Asserted Claims was well understood to those of skill in the art as of the respective priority dates of the Asserted Patents. To describe the state of the art at the time of the alleged inventions, in addition to the references listed on the face of the Asserted Patents and those references listed in Section B and charted in Exhibits A1–A12, B1–B7, C1–C10, D1–D13, and E1–E30, and Appendices A–E, Defendant may rely on at least the references listed below and any admitted prior art discussed in the Asserted Patent and file histories.

1. U.S. Patent No. 7,386,630

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. A more detailed discussion is provided below. The state of the art with respect to the '630 patent is reflected at least in the following references:

- U.S. Patent No. 6,104,700
- U.S. Patent No. 6,154,776
- U.S. Patent No. 6,167,445
- U.S. Patent No. 6,170,009
- U.S. Patent No. 6,408,001
- U.S. Patent No. 6,522,627
- U.S. Patent No. 6,611,532
- U.S. Patent No. 6,625,650
- U.S. Patent No. 6,665,273
- U.S. Patent No. 6,678,264
- U.S. Patent No. 6,680,943
- U.S. Patent No. 6,741,595
- U.S. Patent No. 6,751,729
- U.S. Patent No. 6,775,280
- U.S. Patent No. 6,778,498
- U.S. Patent No. 6,778,496
- U.S. Patent No. 6,791,985
- U.S. Patent No. 6,856,676
- U.S. Patent No. 6,940,864
- U.S. Patent No. 6,968,389
- U.S. Patent No. 7,032,022

- U.S. Patent No. 7,046,680
- U.S. Patent No. 7,116,665
- U.S. Patent No. 7,120,150
- U.S. Patent Publication No. 2003/0053464 A1
- U.S. Patent Publication No. 2003/0185217 A1
- U.S. Patent Publication No. 2003/0231640 A1
- U.S. Patent Publication No. 2004/0028054 A1
- U.S. Patent Publication No. 2004/0081197 A1
- U.S. Patent Publication No. 2004/0117613 A1
- U.S. Patent Publication No. 2004/0213264 A1
- U.S. Patent Publication No. 2004/0258056 A1
- U.S. Patent Publication No. 2005/0018605 A1
- U.S. Patent Publication No. 2005/0088977 A1
- U.S. Patent Publication No. 2006/0073835 A1
- Akyildiz, I.F. et al., “A New Traffic Engineering Manager for Diffserv/MPLS Networks: Design and Implementation on an IP QoS Testbed,” Computer Communications 26 (2003) pp. 388–403
- Bernet, Y. et al., “An Informal Management Model for Diffserv Routers,” RFC 3290, IETF (2002)
- Bruce Davie & Yakov Rekhter, “MPLS Technology and Applications,” pp. 147–170, Morgan Kaufmann Publishers, San Francisco, CA (2000)
- Faucheur, F.L. (ed.), “Protocol Extensions for Support of Diff-Serve-Aware MPLS Traffic Engineering,” draft-ietf-tewg-diff-te-proto-03.txt, IETF Internet Draft (2003)
- Faucheur, F.L. et al., “MPLS Support of Differentiated Services,” RFC 3270, IETF (2002)
- Faucheur, F.L., et al., “Requirements for Support of Diff-Serv-Aware MPLS Traffic Engineering,” draft-ietf-tewg-diff-te-reqts-07.txt, IETF Internet Draft (2003)

- Flegkas, P. et al., “A policy-Based Quality of Service Management System for IP Diffserv Networks,” IEEE Network Magazine (2002)
- Jacobson, V. et al., “An Expedited Forwarding PHB,” RFC 2598, IETF (1999)
- Katz, D. et al., “Traffic Engineering Extensions to OSPF,” draft-katz-yeung-ospf-traffic-09.txt, IETF Internet Draft (2002)
- Li, T. et al., “IS-IS-Extensions for Traffic Engineering,” draft-ietf-isis-traffic-04.txt, Internet Draft (2001)
- Trimintzios, P. et al., “A Management and Control Architecture for Providing IP Differentiated Services in MPLS-based Network,” IEEE Communication Magazine, Special Issue in IP Operations and Management, vol. 39, No. 5 (2001) pp. 80–88
- Westerinen, A. et al., “Terminology for Policy-Based Management,” RFC3198 (2001)

2. **U.S. Patent No. 8,498,286**

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. A more detailed discussion is provided below. The state of the art with respect to the '286 patent is reflected at least in the following references:

- U.S. Patent No. 7,855,982
- U.S. Patent Publication No. 2008/0285475 A1
- U.S. Patent Publication No. 2010/0311392 A1
- U.S. Patent Publication No. 2012/0005356 A1
- Calhoun, P. et al., “Diameter Base Protocol,” RFC 3588, Sep. 2003
- Calhoun, P. et al., “Diameter Network Access Server Application,” RFC 4005, Aug. 2005
- U.S. Patent No. 6,298,383
- U.S. Patent No. 6,594,701
- U.S. Patent No. 6,105,064
- U.S. Patent No. 6,453,429
- U.S. Patent No. 7,551,926

- U.S. Patent Publication No. 2002/0147845A1
- U.S. Patent Publication No. 2002/0194378A1
- U.S. Patent Publication No. 2002/0196775A1
- U.S. Patent Publication No. 2002/0004842A1
- U.S. Patent Publication No. 2002/0131413A1
- U.S. Patent Publication No. 2003/0217285A1
- U.S. Patent Publication No. 2003/0233444A1
- U.S. Patent Publication No. 2003/0040280A1
- U.S. Patent Publication No. 2003/0131151A1
- U.S. Patent Publication No. 2004/0103157A1
- U.S. Patent Publication No. 2004/0152469A1
- U.S. Patent Publication No. 2004/0205212A1
- U.S. Patent Publication No. 2004/0223489A1
- U.S. Patent Publication No. 2004/0225878A1
- U.S. Patent Publication No. 2004/0246965A1
- U.S. Patent Publication No. 2005/0007984A1
- U.S. Patent Publication No. 2005/0086541A1
- U.S. Patent Publication No. 2005/0088971A1
- U.S. Patent Publication No. 2005/0088972A1
- U.S. Patent Publication No. 2005/0058125A1
- U.S. Patent Publication No. 2005/0078642A1
- U.S. Patent Publication No. 2005/0094594A1
- U.S. Patent Publication No. 2005/0124341A1

- U.S. Patent Publication No. 2005/0155036A1
- U.S. Patent Publication No. 2005/~~0159156A1~~
- U.S. Patent Publication No. 2005/0235000A1
- U.S. Patent Publication No. 2006/0030320A1
- U.S. Patent Publication No. 2006/0045249A1
- U.S. Patent Publication No. 2006/0068816A1
- U.S. Patent Publication No. 2006/0077926A1
- U.S. Patent Publication No. 2006/0078119A1
- U.S. Patent Publication No. 2006/0136557A1
- U.S. Patent Publication No. 2006/0172730A1
- U.S. Patent Publication No. 2006/0221972A1
- U.S. Patent Publication No. 2006/0259759A1
- U.S. Patent Publication No. 2006/0274744A1
- U.S. Patent Publication No. 2007/0121596A1
- U.S. Patent Publication No. 2007/0242637A1
- U.S. Patent Publication No. 2007/0297419A1
- U.S. Patent Publication No. 2008/0039104A1
- U.S. Patent Publication No. 2008/0294784A1
- U.S. Patent Publication No. 2009/0080440A1
- U.S. Patent Publication No. 2009/0129271A1
- U.S. Patent Publication No. 2009/0196231A1
- U.S. Patent Publication No. 2009/0196290A1
- U.S. Patent Publication No. 2009/0232011A1

- U.S. Patent Publication No. 2009/0264097A1
- U.S. Patent Publication No. 2009/0265467A1
- U.S. Patent Publication No. 2009/0305684A1
- U.S. Patent Publication No. 2009/0313379A1
- U.S. Patent Publication No. 2009/0083861A1
- U.S. Patent Publication No. 2010/0235519A1
- U.S. Patent Publication No. 2010/0290392A1
- U.S. Patent Publication No. 2010/0291923A1
- U.S. Patent Publication No. 2010/0299451A1
- U.S. Patent Publication No. 2010/0311392A1
- U.S. Patent Publication No. 2010/0331023A1
- U.S. Patent Publication No. 2011/0040845A1
- U.S. Patent Publication No. 2011/0116382A1
- U.S. Patent Publication No. 2011/0202614A1
- U.S. Patent Publication No. 2011/0202676A1
- U.S. Patent Publication No. 2011/0225113A1
- U.S. Patent Publication No. 2011/0225280A1
- U.S. Patent Publication No. 2011/0302244A1
- U.S. Patent Publication No. 2011/0314178A1
- U.S. Patent Publication No. 2012/0096177A1
- U.S. Patent Publication No. 2012/0124220A1
- U.S. Patent Publication No. 2012/0155389A1
- U.S. Patent Publication No. 2012/0155470A1

- U.S. Patent Publication No. 2012/0202550A1
- U.S. Patent Publication No. 2012/0224524A1
- U.S. Patent Publication No. 2012/0224531A1
- U.S. Patent Publication No. 2012/0225679A1
- U.S. Patent Publication No. 2012/0226758A1
- U.S. Patent Publication No. 2012/0226814A1
- U.S. Patent Publication No. 2012/0239771A1
- U.S. Patent Publication No. 2012/0311064A1
- U.S. Patent Publication No. 2012/0275336A1
- EP2023245A1

3. U.S. Patent No. 8,441,721

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. A more detailed discussion is provided below. The state of the art with respect to the '721 patent is reflected at least in the following references:

- U.S. Patent No. 6,590,700
- U.S. Patent Publication No. 2003/0151799 A1
- U.S. Patent Publication No. 2004/0036954 A1
- U.S. Patent Publication No. 2005/0219681 A1
- U.S. Patent Publication No. 2007/0258132 A1
- R. W. Freund, "Optimal Pump Control of Broadband Raman Amplifiers via Linear Programming," Bell Labs Technical Memorandum No. ITD-03-44004F, 2003
- U.S. Patent No. 5,504,617
- U.S. Patent No. 5,673,142
- U.S. Patent No. 5,680,247

- U.S. Patent No. 6,292,288
- U.S. Patent No. 6,344,922
- U.S. Patent No. 6,356,386
- U.S. Patent No. 6,364,459
- U.S. Patent No. 6,441,950
- U.S. Patent No. 6,452,715
- U.S. Patent No. 6,462,861
- U.S. Patent No. 6,476,961
- U.S. Patent No. 6,498,677
- U.S. Patent No. 6,510,000
- U.S. Patent No. 6,515,777
- U.S. Patent No. 6,535,330
- U.S. Patent No. 6,611,370
- U.S. Patent No. 6,621,621
- U.S. Patent No. 6,624,926
- U.S. Patent No. 6,633,430
- U.S. Patent No. 6,690,504
- U.S. Patent No. 6,690,508
- U.S. Patent No. 6,697,187
- U.S. Patent No. 6,735,725
- U.S. Patent No. 6,738,132
- U.S. Patent No. 6,785,042
- U.S. Patent No. 6,823,107

- U.S. Patent No. 7,554,721
- U.S. Patent Publication No. 2001/0019448A1
- U.S. Patent Publication No. 2002/0044336A1
- U.S. Patent Publication No. 2002/0109879A1
- U.S. Patent Publication No. 2002/0186456A1
- U.S. Patent Publication No. 2003/0081308A1
- U.S. Patent Publication No. 2003/0117694A1
- U.S. Patent Publication No. 2004/0032642A1
- U.S. Patent Publication No. 2004/0227931A1
- U.S. Patent Publication No. 2005/0074195A1
- U.S. Patent Publication No. 2005/0123295A1
- U.S. Patent Publication No. 2006/0001950A1
- WO2003084007A1
- DE60031141T2
- EP1353460B1
- EP1376905B1
- GB9115453D0
- JP2001249369A
- JP3411436B2
- JP3558124B2
- JP3872023B2
- JP3878641B2
- JP3899893B2

- JP4057214B2
- JP4094905B2
- JP4101024B2
- JP4115027B2
- JP4115027B2
- JP4821037B2
- JPH09261187A
- JPH0964446A

4. U.S. Patent No. 8,982,691

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. A more detailed discussion is provided below. The state of the art with respect to the '691 patent is reflected at least in the following references:

- U.S. Patent No. 6,778,492
- U.S. Patent No. 8,296,407
- U.S. Patent Publication No. US2006/0114818 A1
- U.S. Patent Publication No. US2006/0159009 A1
- U.S. Patent No. 6,104,700
- U.S. Patent No. 6,154,776
- U.S. Patent No. 6,167,445
- U.S. Patent No. 6,170,009
- U.S. Patent No. 6,408,001
- U.S. Patent No. 6,522,627
- U.S. Patent No. 6,611,532
- U.S. Patent No. 6,625,650

- U.S. Patent No. 6,665,273
- U.S. Patent No. 6,678,264
- U.S. Patent No. 6,680,943
- U.S. Patent No. 6,741,595
- U.S. Patent No. 6,751,729
- U.S. Patent No. 6,775,280
- U.S. Patent No. 6,778,498
- U.S. Patent No. 6,778,496
- U.S. Patent No. 6,791,985
- U.S. Patent No. 6,856,676
- U.S. Patent No. 6,940,864
- U.S. Patent No. 6,968,389
- U.S. Patent No. 7,032,022
- U.S. Patent No. 7,046,680
- U.S. Patent No. 7,116,665
- U.S. Patent No. 7,120,150
- U.S. Patent Publication No. 2003/0053464 A1
- U.S. Patent Publication No. 2003/0185217 A1
- U.S. Patent Publication No. 2003/0231640 A1
- U.S. Patent Publication No. 2004/0028054 A1
- U.S. Patent Publication No. 2004/0081197 A1
- U.S. Patent Publication No. 2004/0117613 A1
- U.S. Patent Publication No. 2004/0213264 A1
- U.S. Patent Publication No. 2004/0258056 A1

- U.S. Patent Publication No. 2005/0018605 A1
- U.S. Patent Publication No. 2005/0088977 A1
- U.S. Patent Publication No. 2006/0073835 A1
- Akyildiz, I.F. et al., “A New Traffic Engineering Manager for Diffserv/MPLS Networks: Design and Implementation on an IP QoS Testbed,” *Computer Communications* 26 (2003) pp. 388–403
- Bernet, Y. et al., “An Informal Management Model for Diffserv Routers,” RFC 3290, IETF (2002)
- Bruce Davie & Yakov Rekhter, “MPLS Technology and Applications,” pp. 147–170, Morgan Kaufmann Publishers, San Francisco, CA (2000)
- Faucheur, F.L. (ed.), “Protocol Extensions for Support of Diff-Serve-Aware MPLS Traffic Engineering,” draft-ietf-tewg-diff-te-03.txt, IETF Internet Draft (2003)
- Faucheur, F.L. et al., “MPLS Support of Differentiated Services,” RFC 3270, IETF (2002)
- Faucheur, F.L., et al., “Requirements for Support of Diff-Serv-Aware MPLS Traffic Engineering,” draft-ietf-tewg-diff-te-reqts-07.txt, IETF Internet Draft (2003)
- Flegkas, P. et al., “A policy-Based Quality of Service Management System for IP Diffserv Networks,” *IEEE Network Magazine* (2002)
- Jacobson, V. et al., “An Expedited Forwarding PHB,” RFC 2598, IETF (1999)
- Katz, D. et al., “Traffic Engineering Extensions to OSPF,” draft-katz-yeung-ospf-traffic-09.txt, IETF Internet Draft (2002)
- Li, T. et al., “IS-IS-Extensions for Traffic Engineering,” draft-ietf-isis-traffic-04.txt, Internet Draft (2001)
- Trimintzios, P. et al., “A Management and Control Architecture for Providing IP Differentiated Services in MPLS-based Network,” *IEEE Communication Magazine*, Special Issue in IP Operations and Management, vol. 39, No. 5 (2001) pp. 80–88
- Westerinen, A. et al., “Terminology for Policy-Based Management,” RFC3198 (2001)

5. U.S. Patent No. 9,450,884

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. A more detailed discussion is provided

below. The state of the art with respect to the '884 patent is reflected at least in the following references:

- U.S. Patent No. 6,714,555
- U.S. Patent Publication No. 2012/0195192 A1
- Alizadeh, M. et al., “Data Center TCP (DCTCP),” SIGCOM'10, 2010, pp. 1–12
- Benson, T. et al., “Network Traffic Characteristics of Data Centers in the Wild,” IMC'10, 2010, pp. 1–14
- Hwang, J. et al., “IA-TCP: A Rate Based Incast-Avoidance Algorithm for TCP in Data Center Networks,” IEEE ICC 2012-Communication QOS, Reliability and Modeling Symposium, 2012, pp. 1292–1296
- Wilson, C. et al., “Better Never Than Late: Meeting Deadlines in Datacenter Networks,” SIGCOMM'11, 2011, pp. 50–61
- Ababei, C., et al., “Achieving Network on Chip Fault Tolerance by Adaptive Remapping,” Parallel & Distributed Processing, 2009, IEEE International Symposium, 4 pgs.
- Abts, D., et al., “Age-Based Packet Arbitration in Large-Radix k-ary n-cubes,” Supercomputing 2007 (SC07), Nov. 10–16, 2007, 11 pgs.
- Beretta, I. et al., “A Mapping Flow for Dynamically Reconfigurable Multi-Core System-on-Chip Design, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems,” Aug. 2011, 30(8), pp. 1211–1224
- Das, R., et al., “Aergia: Exploiting Packet Latency Slack in On-Chip Networks,” 37th International Symposium on Computer Architecture (ISCA '10), Jun. 19–23, 2010, 11 pgs.
- Ebrahimi, E., et al., “Fairness via Source Throttling: A Configurable and High-Performance Fairness Substrate for Multi-Core Memory Systems,” ASPLOS '10, Mar. 13–17, 2010, 12 pgs.
- Falko et al., “Fair rate packet arbitration in Network-on-Chip,” Sep. 26–28, 2011, IEEE.
- Gindin, R., et al., “NoC-Based FPGA: Architecture and Routing,” Proceedings of the First International Symposium on Networks-on-Chip (NOCS'07), May 2007, pp. 253–262

- Grot, B., Kilo-NOC: “A Heterogeneous Network-on-Chip Architecture for Scalability and Service Guarantees,” ISCA '11, Jun. 4-8, 2011, 12 pgs.
- Grot, B., “Preemptive Virtual Clock: A Flexible, Efficient, and Cost-Effective QOS Scheme for Networks-on-Chip,” Micro '09, Dec. 12–16, 2009, 12 pgs.
- Grot, B., “Topology-Aware Quality-of-Service Support in Highly Integrated Chip Multiprocessors,” 6th Annual Workshop on the Interaction between Operating Systems and Computer Architecture, Jun. 2006, 11 pgs.
- Jiang, N., et al., “Performance Implications of Age-Based Allocations in On-Chip Networks,” CVA MEMO 129, May 24, 2011, 21 pgs.
- Lee et al., “Probabilistic Distance-based Arbitration: Providing Equality of Service for Many-core CMPs,” Dec. 4–8, 2010, IEEE.
- Lee, J. W., et al., “Globally-Synchronized Frames for Guaranteed Quality-of-Service in On-Chip Networks,” 35th IEEE/ ACM International Symposium on Computer Architecture (ISCA), Jun. 2008, 12 pgs.
- Lee, M. M., et al., “Approximating Age-Based Arbitration in On-Chip Networks,” PACT '10, Sep. 11–15, 2010, 2 pgs.
- Li, B., et al., “CoQoS: Coordinating QoS-Aware Shared Resources in NoC-based SoCs,” J. Parallel Distrib. Comput., 71 (5), May 2011, 14 pgs.
- Yang, J., et al., “Homogeneous NoC-based FPGA: The Foundation for Virtual FPGA,” 10th IEEE International Conference on Computer and Information Technology (CIT 2010), Jun. 2010, pp. 62–67
- U.S. Patent No. 5,432,785
- U.S. Patent No. 5,764,740
- U.S. Patent No. 5,991,308
- U.S. Patent No. 6,003,029
- U.S. Patent No. 6,249,902
- U.S. Patent No. 6,405,258
- U.S. Patent No. 6,415,282
- U.S. Patent No. 6,925,627

- U.S. Patent No. 7,020,143
- U.S. Patent No. 7,318,214
- U.S. Patent No. 7,564,865
- U.S. Patent No. 7,590,959
- U.S. Patent No. 7,724,735
- U.S. Patent No. 7,725,859
- U.S. Patent No. 7,808,968
- U.S. Patent No. 7,917,885
- U.S. Patent No. 8,050,256
- U.S. Patent No. 8,059,551
- U.S. Patent No. 8,099,757
- U.S. Patent No. 8,136,071
- U.S. Patent No. 8,203,938
- U.S. Patent No. 8,281,297
- U.S. Patent No. 8,312,402
- U.S. Patent No. 8,412,795
- U.S. Patent No. 8,448,102
- U.S. Patent No. 8,492,886
- U.S. Patent No. 8,541,819
- U.S. Patent No. 8,601,423
- U.S. Patent No. 8,667,439
- U.S. Patent No. 8,705,368
- U.S. Patent No. 8,717,875

- U.S. Patent Publication No. 2002/0071392A1
- U.S. Patent Publication No. 2002/0073380A1
- U.S. Patent Publication No. 2002/0095430A1
- U.S. Patent Publication No. 2003/0058802A1
- U.S. Patent Publication No. 2004/0095882A1
- U.S. Patent Publication No. 2004/0136359A1
- U.S. Patent Publication No. 2004/0216072A1
- U.S. Patent Publication No. 2005/0111361A1
- U.S. Patent Publication No. 2005/0147081A1
- U.S. Patent Publication No. 2005/0195740A1
- U.S. Patent Publication No. 2005/0213504A1
- U.S. Patent Publication No. 2005/0276219A1
- U.S. Patent Publication No. 2006/0146708A1
- U.S. Patent Publication No. 2006/0146875A1
- U.S. Patent Publication No. 2006/0161875A1
- U.S. Patent Publication No. 2006/0171313A1
- U.S. Patent Publication No. 2006/0209846A1
- U.S. Patent Publication No. 2007/0118320A1
- U.S. Patent Publication No. 2007/0121505A1
- U.S. Patent Publication No. 2007/0223373A1
- U.S. Patent Publication No. 2007/0244676A1
- U.S. Patent Publication No. 2007/0256044A1
- U.S. Patent Publication No. 2007/0267680A1

- U.S. Patent Publication No. 2008/0025214A1
- U.S. Patent Publication No. 2008/0072182A1
- U.S. Patent Publication No. 2008/0120129A1
- U.S. Patent Publication No. 2008/0232387A1
- U.S. Patent Publication No. 2009/0016222A1
- U.S. Patent Publication No. 2009/0070726A1
- U.S. Patent Publication No. 2009/0080328A1
- U.S. Patent Publication No. 2009/0268677A1
- U.S. Patent Publication No. 2009/0313592A1
- U.S. Patent Publication No. 2010/0040162A1
- U.S. Patent Publication No. 2010/0149978A1
- U.S. Patent Publication No. 2010/0149986A1
- U.S. Patent Publication No. 2011/0007631A1
- U.S. Patent Publication No. 20110035523A1
- U.S. Patent Publication No. 20110060831A1
- U.S. Patent Publication No. 20110072407A1
- U.S. Patent Publication No. 20110154282A1
- U.S. Patent Publication No. 20110276937A1
- U.S. Patent Publication No. 2012/0022841A1
- U.S. Patent Publication No. 2012/0023473A1
- U.S. Patent Publication No. 2012/0026917A1
- U.S. Patent Publication No. 2012/0110541A1
- U.S. Patent Publication No. 2012/0155250A1

- U.S. Patent Publication No. 2013/0051397A1
- U.S. Patent Publication No. 2013/0080073A1
- U.S. Patent Publication No. 2013/0103369A1
- U.S. Patent Publication No. 2013/0151215A1
- U.S. Patent Publication No. 2013/0159944A1
- U.S. Patent Publication No. 2013/0174113A1
- U.S. Patent Publication No. 2013/0207801A1
- U.S. Patent Publication No. 2013/0219148A1
- U.S. Patent Publication No. 2013/0258847A1
- U.S. Patent Publication No. 2013/0263068A1
- U.S. Patent Publication No. 2013/0326458A1
- U.S. Patent Publication No. 2014/0068132A1
- U.S. Patent Publication No. 2014/0092740A1
- U.S. Patent Publication No. 2014/0098683A1

B. Identification of Prior Art

Defendant identifies the following prior art now known to Defendant that anticipate or render obvious one or more of the Asserted Claims. Each of the following patents, publications, systems, and products is prior art under at least one or more of 35 U.S.C. § 102(a), (b), (e), (f), or (g) (pre-AIA) or § 102(a) (post-AIA), as applicable. Defendant's reliance on each prior art reference identified throughout these Invalidity Contentions includes the reference itself, anything incorporated by the reference, and any testimony by those with knowledge of the reference, such

as named authors and inventors. On information and belief, each listed document or item became prior art at least as early as the dates specified.

To the extent any limitation of any of the Asserted Claims is construed to have a similar meaning, or to encompass similar feature(s) and/or function(s), with any other claim limitation, and to the extent at least one claim chart in Exhibits A1–A12, B1–B7, C1–C10, D1–D13, and E1–E30, and Appendices A–E hereto identifies any prior art reference as disclosing or teaching such similarly construed claim limitation, such identified prior art reference and Defendant’s contentions with respect to same are incorporated by reference. Priority dates identified for the prior art references are based on information currently available to Defendant, and Defendant will amend this disclosure to the extent additional information becomes available.

To the extent that they are prior art, Defendant reserves the right to rely upon (1) foreign counterparts of the U.S. Patents identified in Defendant’s Invalidity Contentions, (2) U.S. counterparts of foreign patents and foreign patent applications identified in Defendant’s Invalidity Contentions, and (3) U.S. and foreign patents and patent applications corresponding to articles and publications identified in Defendant’s Invalidity Contentions.

The prior art identified below is exemplary; the claimed features are similarly described or disclosed in additional prior art. Thus, Defendant reserves the right to rely on other evidence of the prior art beyond the example references identified herein.

The primary references identified below, and as further described in Exhibits A1–A12, B1–B7, C1–C10, D1–D13, and E1–E30, each discloses, either expressly or inherently, every element of the Asserted Claims, thereby anticipating those claims. To the extent Brazos contends that any primary reference does not anticipate the Asserted Claims, it would have been obvious to combine

or modify the primary references with concepts from other prior art, as explained herein and in Appendices A–E.

In particular, for each limitation of the Asserted Claims that Brazos contends is not met by a particular primary reference, Defendant contends that the limitation (and claim as a whole) is obvious based on a combination of that particular primary reference with (1) any other primary reference disclosing that limitation, (2) any admitted prior art, as explained in the background of each patent or discussed in the file history, (3) any reference identified in Appendices A-E as disclosing that limitation, and/or (4) the knowledge of a person of ordinary skill in the art and/or any of the references and concepts discussed herein regarding the relevant background and state of the art. The specific combinations of prior art that Defendant contends render the Asserted Claims obvious are readily determinable as described herein, which is the most efficient manner of identifying the combinations. Defendant’s obviousness grounds for each dependent claim incorporate the obviousness grounds for the claim(s) from which the dependent claim depends in addition to any obviousness grounds identified in the charts for the dependent claim.

Defendant does not yet have the benefit of Brazos’s positions on the prior art, including what (if any) elements it contends are missing in each prior art reference, whether Brazos agrees that a reference is in fact prior art, and whether Brazos agrees that a person of ordinary skill in the art would be motivated to combine specific references. Defendant reserves the right to supplement these obviousness positions (including identifying additional prior art combinations and the associated reasons to combine) as discovery in the case progresses, including expert discovery.

1. U.S. Patent No. 7,386,630

a. Prior Art Patents and Publications

- U.S. Patent Publication No. 2002/0194317 (“Kanada”)
- U.S. Patent Publication No. 2003/0231640 (“Basso”)

- U.S. Patent No. 7,283,465 (“Zelig”)
- U.S. Patent Publication No. 2004/0177157 (“Mistry”)
- MPLS Management Using Policies (“Brunner”)
- An Investigation of Forwarding in the MPLS support for Differentiated Services (“Kulkarni”)
- Traffic Engineering with MPLS
- Report on the Quality of Service Translations (QoST) Project (“Prabakaran”)
- Efficient agent-based selection of DiffServ SLAs over MPLS Networks (“Papaioannou”)
- RFC 3270
- RFC 3209

b. Prior Art Systems

Defendant identifies the following systems—including constituent software, hardware, methods, and processes—as prior art that anticipate or render obvious the Asserted Claims of these patents. Each system (1) was known or used in this country before the alleged invention of the claimed subject matter of the patent-in-suit; (2) was in public use and/or on sale in this country more than one year before the filing date of the application for the patent-in-suit; and/or (3) was invented and not abandoned, suppressed, or concealed prior to the alleged invention of the Asserted Patents.

Evidence of public use and/or sale of the listed system art includes web pages from the time of the alleged invention, for example, as saved on the Internet Archive, and/or certain patents related to these systems. Exemplary examples of such web pages have been produced herewith. Discovery is ongoing and Defendant will supplement as discovery continues.

- Cisco IOS 12.1 and/or 12.2 running on Cisco platforms

c. Prior Invention Under § 102(g)

For any of the prior art that Defendant has identified, Defendant may argue that the authors or inventors of that prior art invented the subject matter claimed in the '630 Patent prior to the filing date of the '630 Patent. Discovery has not started, and Defendant will supplement as discovery begins.

d. Obviousness and Secondary References

Defendant identifies each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section II.D:

- U.S. Patent No. 6,587,876
- U.S. Patent Publication No. 2001/043571
- U.S. Patent Publication No. 2002/126633
- U.S. Patent Publication No. 2003/041266
- U.S. Patent Publication No. 2003/055920
- U.S. Patent Publication No. 2003/103510
- U.S. Patent Publication No. 2003/108015
- U.S. Patent Publication No. 2003/115246
- U.S. Patent Publication No. 2003/123446
- U.S. Patent Publication No. 2003/227876
- U.S. Patent Publication No. 2004/218535
- U.S. Patent Publication No. 2006/039364

2. U.S. Patent No. 8,498,286

a. Prior Art Patents and Publications

- U.S. Patent No. 7,170,982 (“Li”)
- KR 100773788 (“Shim”)
- U.S. Patent Publication No. 2012/0311102 (“Stenfelt”)
- U.S. Patent Publication No. 2011/0202660 (“Pandya”)
- U.S. Patent Publication No. 2011/0165901 (“Baniel”)
- 3GPP TSG SA WG2 Meeting #61 TD S2-075065 (“ZTE”)
- ETSI TS 123 203 V9.2.0 (“ETSI”)

b. Prior Invention Under § 102(g)

For any of the prior art that Defendant has identified, Defendant may argue that the authors or inventors of that prior art invented the subject matter claimed in the ’286 patent prior to the filing date of the ’286 patent. Discovery is ongoing and Defendant will supplement as discovery continues.

c. Obviousness and Secondary References

Defendant identifies each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section II.D:

- U.S. Patent Publication No. 2007/153995
- U.S. Patent Publication No. 2007/271354
- U.S. Patent Publication No. 2008/229385
- U.S. Patent Publication No. 2009/156213

- U.S. Patent Publication No. 2009/207757
 - U.S. Patent Publication No. 2010/142517
 - U.S. Patent Publication No. 2010/284336
 - U.S. Patent Publication No. 2010/313020
 - U.S. Patent Publication No. 2011/319054
 - U.S. Patent Publication No. 2012/155389
 - U.S. Patent Publication No. 2013/052995
 - J. Lin *et al.*, *Introduction to Diameter*, IBM Developer Works, Jan. 24, 2006
 - S. Lim and Y. Kim, *Interworking between High-speed Portable Internet and Existing Wireless LANs using Different AAA Protocols*, WSEAS Conferences, Athens, Greece, 2004
 - *Diameter NASREQ Application*, IETF AAA Working Group, March 2002
 - *Diameter Network Access Server Application*, IETF AAA Working Group, June 2004
 - *RADIUS Extensions for IEEE 802*, IETF Networking Working Group, February 2005
 - M. Bogdanoski *et al.*, *Authentication, authorization and accounting provided by diameter protocol*, Conference: 9th National Conference with International Participation - ETAI 2009, September 2009
3. **U.S. Patent No. 8,441,721**
- a. **Prior Art Patents and Publications**
- U.S. Patent Publication No. 2004/0196158 (“Sugaya”)
 - U.S. Patent Publication No. 2008/0049303 (“Nakata”)
 - EP1696524 (“Zhou”)
 - U.S. Patent Publication No. 2006/0127086 (“Frankel”)
 - U.S. Patent No. 7,251,071 (“Kilper”)
 - U.S. Patent Publication No. 2009/0214204 (“Bengtsson”)

- X. Zhang and Z. Yu, *Automatic control algorithm of Raman amplifiers*, Proceedings Volume 5625, Optical Transmission, Switching, and Subsystems II (2005) (“Zhang I”)

b. Prior Art Systems

Defendant identifies the following systems—including constituent software, hardware, methods, and processes—as prior art that anticipate or render obvious the Asserted Claims of these patents. Each system (1) was known or used in this country before the alleged invention of the claimed subject matter of the patent-in-suit; (2) was in public use and/or on sale in this country more than one year before the filing date of the application for the patent-in-suit; and/or (3) was invented and not abandoned, suppressed, or concealed prior to the alleged invention of the Asserted Patents.

Evidence of public use and/or sale of the listed system art includes web pages from the time of the alleged invention, for example, as saved on the Internet Archive, and/or certain patents related to these systems. Exemplary examples of such web pages have been produced herewith. Discovery is ongoing and Defendant will supplement as discovery continues.

- Cisco ONS 15454 Multiservice Transport Platform (“ONS 15454”)
- ADVA FSP 3000 optical transport product (“FSP 3000”)
- Corning PureGain 5000R (“PureGain”)

c. Prior Invention Under § 102(g)

For any of the prior art that Defendant has identified, Defendant may argue that the authors or inventors of that prior art invented the subject matter claimed in the ’721 patent prior to the filing date of the ’721 patent. Discovery is ongoing and Defendant will supplement as discovery continues.

d. Obviousness and Secondary References

Defendant identifies each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section II.D:

- U.S. Patent No. 6,865,328
- U.S. Patent No. 8,482,849
- EP 1458065 B1
- X. Liu and B. Lee, *Optimal design of fiber Raman amplifier based on hybrid genetic algorithm*, 16-2 IEEE Photonics Technology Letters (February 2004)
- W. Zhang, L. Xiao, and J. Peng, *Matrix Algorithms for Dynamic Gain-Spectrum Adjustment of Backward-Pumped Distributed Fiber Raman Amplifier*, 24-3 Journal of Lightwave Technology 1581 (2006)
- N. Park *et al.*, *Designing Raman amplified transmission systems-what's there and how to*, Proceedings of SPIE - The International Society for Optical Engineering (November 2005)
- H. Wen *et al.*, *Linear regression method for wide-band flat-gain fiber Raman amplifier pump power automatic configuration*, Proceedings Volume 6021, Optical Transmission, Switching, and Subsystems III; 60211M (December 2005)
- U.S. Patent Publication No. 2001/050802 A1
- U.S. Patent Publication No. 2002/071173 A1
- U.S. Patent Publication No. 2003/067670 A1
- U.S. Patent Publication No. 2003/147124 A1
- U.S. Patent Publication No. 2003/169479 A1
- U.S. Patent Publication No. 2004/156095 A1
- U.S. Patent Publication No. 2005/220161 A1

- U.S. Patent Publication No. 2005/225843 A1
- U.S. Patent Publication No. 2006/164716 A1
- U.S. Patent Publication No. 2007/291351 A1
- U.S. Patent Publication No. 2009/303575 A1
- U.S. Patent Publication No. 2009/324233 A1
- U.S. Patent Publication No. 2010/129081 A1
- U.S. Patent No. 6,542,287
- U.S. Patent No. 6,583,926
- U.S. Patent No. 6,907,051
- U.S. Patent No. 7,167,299

4. U.S. Patent No. 8,982,691

a. Prior Art Patents and Publications

- U.S. Patent Publication No. 2006/0013127 (“Izaiku”)
- U.S. Patent No. 7,352,703 (“Elie-Dit-Cosaque”)
- U.S. Patent Publication No. 2009/0292943 (“Hanif”)
- U.S. Patent Publication No. 2005/0259586 (“Hafid”)
- U.S. Patent No. 7,627,243 (“Sadananda”)
- U.S. Patent Publication No. 2003/028818 (“Fujita”)
- U.S. Patent Publication No. 2007/165515 (“Vasseur”)
- PROTECTION AND RESTORATION IN MPLS NETWORKS (“Harrison”)
- Design of a dynamic path protection mechanism in MPLS networks (“Park”)
- Traffic Engineering with MPLS
- IETF - Draft Restoration Mechanisms and Signalling in Optical Networks
- RFC 4872

b. Prior Art Systems

Defendant identifies the following systems—including constituent software, hardware, methods, and processes—as prior art that anticipate or render obvious the Asserted Claims of these patents. Each system (1) was known or used in this country before the alleged invention of the claimed subject matter of the patent-in-suit; (2) was in public use and/or on sale in this country more than one year before the filing date of the application for the patent-in-suit; and/or (3) was invented and not abandoned, suppressed, or concealed prior to the alleged invention of the Asserted Patents.

Evidence of public use and/or sale of the listed system art includes web pages from the time of the alleged invention, for example, as saved on the Internet Archive, and/or certain patents related to these systems. Exemplary examples of such web pages have been produced herewith. Discovery is ongoing and Defendant will supplement as discovery continues.

- Cisco IOS 12.1 and/or 12.2 running on Cisco platforms

c. Prior Invention Under § 102(g)

For any of the prior art that Defendant has identified, Defendant may argue that the authors or inventors of that prior art invented the subject matter claimed in the '691 patent prior to the filing date of the '691 patent. Discovery is ongoing and Defendant will supplement as discovery continues.

d. Obviousness and Secondary References

Defendant identifies each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of

ordinary skill in the art would be motivated to combine these references as explained in Section II.D.

- U.S. Patent No. 7,626,925
- U.S. Patent Publication No. 2003/126287
- U.S. Patent Publication No. 2006/031490
- U.S. Patent Publication No. 2010/177631
- U.S. Patent Publication No. 2011/063972
- U.S. Patent Publication No. 2011/199891
- U.S. Patent Publication No. 2011/211445
- U.S. Patent Publication No. 2013/088953
- U.S. Patent Publication No. 2013/121169
- U.S. Patent Publication No. 2013/336159
- U.S. Patent Publication No. 2013/336191
- U.S. Patent Publication No. 2013/336192
- U.S. Patent Publication No. 2015/215200
- KR Publication No. 2012/0035354
- Flow-Level Multipath Load Balancing in MPLS Network

5. U.S. Patent No. 9,450,884

a. Prior Art Patents and Publications

- U.S. Patent Publication No. 2014/0022901 (“Suzuki”)
- U.S. Patent No. 8,155,003 (“Dong”)
- U.S. Patent No. 9,007,920 (“Kumar”)
- U.S. Patent No. 9,160,678 (“DeCusatis”)

- WO2013/063929 (“Zhang-929”)
- U.S. Patent No. 5,838,681 (“Bonomi”)
- U.S. Patent No. 6,108,306 (“Kalkunte”)
- U.S. Patent No. 7,016,301 (“Moore”)
- U.S. Patent No. 7,257,640 (“Callocchia”)
- U.S. Patent No. 7,453,804 (“Feroz”)
- U.S. Patent No. 7,924,713 (“Porat”)
- U.S. Patent No. 7,969,886 (“Hoichman”)
- U.S. Patent No. 7,990,858 (“Iny”)
- U.S. Patent No. 8,542,586 (“Chen”)
- U.S. Patent No. 9,013,995 (“Beheshti-Zavareh”)
- U.S. Patent Publication No. 2009/0116381 (“Kanda”)
- U.S. Patent No. 9,237,107 (“Ansari”)
- U.S. Patent No. 8,949,444 (“Ma”)
- U.S. Patent No. 8,817,807 (“Suzuki-807”)
- U.S. Patent No. 8,274,887 (“Peterson”)
- U.S. Patent No. 8,681,616 (“Chen-616”)
- N. Dukkipati, *Rate Control Protocol (RCP): Congestion Control To Make Flows Complete Quickly*, Stanford University (Oct. 2007) (“RCP”)
- C. Wilson *et al.*, *Better Never than Late: Meeting Deadlines in Datacenter Networks*, SIGCOMM’11, Toronto, Ontario, Canada, August 15–19, 2011 (“D3”)
- H. Jin *et al.*, *OpenFlow-Based Flow-Level Bandwidth Provisioning for CICQ Switches*, 2011 Proceedings IEEE INFOCOM, April 10–15, 2011 (“Jin”)
- M. Ghobadi, *TCP Adaptation Framework in Data Centers*, University of Toronto (2013) (“OpenTCP”)

- Y. Zhang, *Congestion control, energy efficiency and virtual machine placement for data centers*, NJ Institute of Technology (2014) (“Zhang II”)
- Y. Zhang and N. Anarsi, *Fair Quantized Congestion Notification in Data Center Networks*, 61-11 IEEE Transactions on Communications 4690 (Nov. 2013) (“Zhang-2013”)

b. Prior Art Systems

Defendant identifies the following systems—including constituent software, hardware, methods, and processes—as prior art that anticipate or render obvious the Asserted Claims of these patents. Each system (1) was known or used in this country before the alleged invention of the claimed subject matter of the patent-in-suit; (2) was in public use and/or on sale in this country more than one year before the filing date of the application for the patent-in-suit; and/or (3) was invented and not abandoned, suppressed, or concealed prior to the alleged invention of the Asserted Patents.

Evidence of public use and/or sale of the listed system art includes web pages from the time of the alleged invention, for example, as saved on the Internet Archive, and/or certain patents related to these systems. Exemplary examples of such web pages have been produced herewith. Discovery is ongoing and Defendant will supplement as discovery continues.

- Cisco Catalyst 3850 Series Switches (“Catalyst 3850”)
- Arista 7500 Series Data Center Switches (“Arista 7500”)
- Alcatel-Lucent 7750 Service Router (“AL 7750”)

c. Prior Invention Under § 102(g)

For any of the prior art that Defendant has identified, Defendant may argue that the authors or inventors of that prior art invented the subject matter claimed in the ’884 patent prior to the filing date of the ’884 patent. Discovery is ongoing and Defendant will supplement as discovery continues.

d. Obviousness and Secondary References

Defendant identifies each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section

II.D:

- U.S. Patent No. 7,142,590
- D. Pan and Y. Yang, *Max-Min Fair Bandwidth Allocation Algorithms for Packet Switches*, 2007 IEEE International Parallel and Distributed Processing Symposium (March 2007)
- J. Tate et al., *IBM/Cisco Multiprotocol Routing: An Introduction and Implementation*, IBM Redbooks (March 2009)
- U.S. Patent Publication No. 2004/148423
- U.S. Patent Publication No. 2005/213586
- U.S. Patent Publication No. 2006/245356
- U.S. Patent Publication No. 2006/250959
- U.S. Patent Publication No. 2010/121972
- U.S. Patent Publication No. 2011/158248
- U.S. Patent Publication No. 2012/106342
- U.S. Patent Publication No. 2013/051276
- U.S. Patent Publication No. 2013/322271
- U.S. Patent Publication No. 2014/325522

C. Claim Charts

Charts specifically identifying where each element of each Asserted Claim is found in the prior art, either expressly or inherently, are found in Exhibits A1–A12, B1–B7, C1–C10, D1–D13, and E1–E30, and Appendices A–E. However, this prior art is exemplary; the claimed features are similarly described or disclosed in other prior art.

In the claim charts included in this disclosure, Defendant identifies specific portions of prior art references that disclose or render obvious the elements of the Asserted Claims. Although Defendant has identified at least one citation per element, each and every disclosure of the same element in a given reference is not necessarily identified. That Defendant did not identify each similar disclosure should not be construed as a concession by Defendant that such disclosure is not relevant. It should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information, including other publications and general scientific or engineering knowledge.

Where Defendant identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure as well as any text relating to the figure in the specification and prosecution history in addition to the figure itself. Similarly, where an identified portion of text refers to a figure or other material, the identification should be understood to include the referenced figure or other material as well.

Certain pieces of identified prior art disclose features of the Asserted Claims inherently. Defendant may rely on any evidence, including expert testimony, to establish the inherency of certain features of the prior art to invalidate the Asserted Claims.

D. Motivations to Combine Prior Art

Defendant believes that no showing of a specific motivation to combine prior art is required to combine the references disclosed in the attached charts; there was a reason to make each combination, each combination of art would have produced no unexpected results, and each combination at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 414–18 (2007) (rejecting the Federal Circuit’s “rigid” application of the teaching, suggestion, or motivation to combine test and instead espousing an “expansive and flexible” approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is “a person of ordinary creativity, not an automaton” and “in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420–21.

In view of *KSR*, the PTO issued a set of new Examination Guidelines. *See* Examination Guidelines for Determining Obviousness Under 35 U.S.C. § 103 in View of the Supreme Court Decision in *KSR Int'l Co. v. Teleflex Inc.*, 72 Fed. Reg. 57,526 (Oct. 10, 2007). Those Guidelines identified various rationales for finding a claim obvious, including:

- a) Combining prior art elements according to known methods to yield predictable results;
- b) Simple substitution of one known element for another to obtain predictable results;
- c) Use of known technique to improve similar devices (methods, or products) in the same way;
- d) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- e) “Obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- f) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;

- g) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Id. at 57,529.

In addition, the motivation to combine or modify prior art references is significantly stronger when, as here, the references seek to solve the same problem, come from the same field, and correspond well. *In re Inland Steel Co.*, 265 F.3d 1354, 1362 (Fed. Cir. 2001) (allowing two references to be combined as invalidating art under similar circumstances where the art “focus[ed] on the same problem . . . [,] c[a]me from the same field of art [and] . . . the identified problem found in the two references correspond[ed] well”).

Defendant has identified several exemplary motivations and reasons to combine the various references cited herein, and those motivations would have been supported, in part, by a reasonable expectation of success. The various teachings, suggestions, and/or reasons to modify any of the references and/or to combine any two or more of the references in Exhibits A1–A12, B1–B7, C1–C10, D1–D13, and E1–E30, and Appendices A–E come from various sources, including the prior art (specific and as a whole), common knowledge, common sense, predictability, expectations, industry trends, design incentives or need, market demand or pressure, market forces, the nature of the problem faced, and/or the knowledge possessed by one of ordinary skill in the art. In addition, it would have been obvious to try combining the prior art references identified above.

These exemplary combinations demonstrate that there were only a finite number of predictable solutions to known problems addressed by the Asserted Patents. Furthermore, known work in one field or endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. The combination of features found in the prior art references identified in these contentions would have been obvious because the claimed combinations represent the known potential options, with each such option having a reasonable

expectation of success. Additionally, one of ordinary skill in the art would have been motivated to create combinations identified in these contentions using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or teaching, suggestion, or motivation in the prior art generally. Also, market forces in the industry, and the desire to improve features and performance, would motivate the addition of features to systems as they become available, become less expensive, become more commonly used, provide better performance and reliability, reduce costs, or predictably achieve other clearly desirable results.

To the extent Brazos alleges that any other claimed limitation or limitations are not disclosed in any primary reference, it would have been obvious to combine the teachings of the reference with the background knowledge of a person of ordinary skill in the art and/or it would have been obvious to incorporate the missing limitation(s), including as disclosed in Exhibits A1–A12, B1–B7, C1–C10, D1–D13, and E1–E30, and Appendices A–E, into the primary reference for the reasons disclosed herein. For example, one of ordinary skill in the art would have found substantial motivation to combine one or more of the primary references with one more of each other or the secondary references in order to disclose the alleged inventions recited in the Asserted Claims. Each of the references disclosed herein as invalidating an Asserted Patent was directed at the same or similar field of technology and the same or similar problem as that Asserted Patent. To the extent Brazos alleges that any particular claim limitation is not disclosed or inherent in the charted references, it would have been obvious to combine the charted reference with one or more of the references identified herein for the particular claim limitations. Also, as Defendant is currently unaware of the extent, if any, to which Brazos will contend that limitations of the Asserted Claims are not disclosed in the art identified herein as anticipatory, Defendant reserves

the right to identify other references and combinations that may render an allegedly missing limitation obvious. In addition, if and to the extent that Brazos challenges the relevance of any of these references with respect to particular limitations of the Asserted Claims of the Asserted Patents, Defendant reserves its right to identify further motivation to combine particular references with additional particularity.

1. U.S. Patent No. 7,386,630 – Exemplary Motivations to Combine

Defendant has identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge of a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

It would have been obvious to combine each of the references discussed below because they are analogous art generally directed to communication networks and, more specifically, to data packet routing methods. For example:

- For the Asserted Claims of the '630 patent, to the extent the references charted in any of Exhibits A1 to A12 do not disclose “defining a mapping policy configured to map between an experimental field and a unique per-hop-behavior,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Basso, Zelig, Mistry, Brunner, Kulkarni, Traffic Engineering with MPLS, Papaioannou, and Prabakaran. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to define a mapping policy configured to map between an experimental field, or field carrying traffic class information, and per-hop-behavior. A person of ordinary skill would have been

motivated to look at how other products and systems define mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '630 patent, to the extent the references charted in any of Exhibits A1 to A12 do not disclose “defining a customer policy comprising a tunneling mode and a tunnel group identifier, the customer policy being configured to govern the treatment of individual customer traffic,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Basso, Zelig, Mistry, Brunner, Kulkarni, Traffic Engineering with MPLS, Papaioannou, and Prabakaran. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to define customer policy, including identifying a tunneling mode and a tunnel group identifier. A person of ordinary skill would have been motivated to look at how other products and systems define customer policies, tunnels, and tunneling modes. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '630 patent, to the extent the references charted in any of Exhibits A1 to A12 do not disclose “defining a network policy that is configured to define the Diffserv treatment of aggregated traffic,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Basso, Zelig, Mistry, Brunner, Kulkarni, Traffic Engineering with MPLS, Papaioannou, and Prabakaran. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to define a network policy, including defining differentiated service, or Diffserv, treatment of aggregated traffic. A person of ordinary skill would have been motivated to look at how other products and systems define network policies and differentiated service treatment of aggregated traffic. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art

solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '630 patent, to the extent the references charted in any of Exhibits A1 to A12 do not disclose “translating the mapping policy, the network policy and the customer policy into device-specific commands,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Basso, Zelig, Mistry, Brunner, Kulkarni, Traffic Engineering with MPLS, Papaioannou, and Prabakaran. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to translate various policies, including mapping policies, network policies, and customer policies, into device-specific commands. A person of ordinary skill would have been motivated to look at how other products and systems translate various policies into device-specific commands. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '630 patent, to the extent the references charted in any of Exhibits A1 to A12 do not disclose “sending the device-specific commands to policy targets, wherein each policy target comprises a network device that includes an interface assigned a role name associated with the customer policy, at least one of the interfaces comprising an egress interface of one of multi-protocol label switching tunnels,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Basso, Zelig, Mistry, Brunner, Kulkarni, Traffic Engineering with MPLS, Papaioannou, and Prabakaran. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send device-specific commands to policy targets, such as network devices, that include interfaces assigned a role name associated with a customer policy, where at least one of the interfaces include an egress interface of one of multi-protocol label switching tunnels. A person of ordinary skill would have been motivated to look at how other products and systems send device-specific commands to network devices. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying

known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '630 patent, to the extent the references charted in any of Exhibits A1 to A12 do not disclose “sending is such that the interfaces associate with at least one of input roles, output roles and multi-protocol label switching gateways of customer source and destination host groups,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Basso, Zelig, Mistry, Brunner, Kulkarni, Traffic Engineering with MPLS, Papaioannou, and Prabakaran. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send device-specific commands. Interfaces associated with at least one of input roles, output roles and multi-protocol label switching gateways were also known. Customer source groups and destination host groups were also known. A person of ordinary skill would have been motivated to look at how other products and systems send device-specific commands to network devices. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '630 patent, to the extent the references charted in any of Exhibits A1 to A12 do not disclose “sending the mapping policy to the network interfaces further comprises issuing new commands to reconfigure a router based on the mapping policy,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Basso, Zelig, Mistry, Brunner, Kulkarni, Traffic Engineering with MPLS, Papaioannou, and Prabakaran. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying

known techniques to a known method—that was ready for improvement—to yield predictable results.

2. U.S. Patent No. 8,498,286 – Exemplary Motivations to Combine

Defendant has identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge of a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

It would have been obvious to combine each of the references discussed below because they are analogous art generally directed to communication networks and, more specifically, to gateway policy management. For example:

- For the Asserted Claims of the '286 patent, to the extent the references charted in any of Exhibits B1 to B7 do not disclose “receiving at a Radius gateway a Radius message from the wireline device,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Li, Shim, Stenfelt, Pandya, Baniel, ZTE, and ETSI. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies and rules in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '286 patent, to the extent the references charted in any of Exhibits B1 to B7 do not disclose “at the Radius gateway, translating the Radius message into a Network Access Server Request (NASReq) message,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Li, Shim, Stenfelt, Pandya, Baniel, ZTE, and ETSI. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies and rules in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '286 patent, to the extent the references charted in any of Exhibits B1 to B7 do not disclose “selecting one of at least one PCRF cluster within a Policy and Charging Rules Function (PCRF) server to handle a communication session identified by the NASReq message, the selected PCRF cluster being configured to handle communication sessions for wireless devices,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Li, Shim, Stenfelt, Pandya, Baniel, ZTE, and ETSI. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies and rules in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '286 patent, to the extent the references charted in any of Exhibits B1 to B7 do not disclose “passing the NASReq message to the selected PCRF cluster,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Li, Shim, Stenfelt, Pandya, Baniel, ZTE, and ETSI. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies and rules in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '286 patent, to the extent the references charted in any of Exhibits B1 to B7 do not disclose “passing the NASReq message to the selected PCRF cluster,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Li, Shim, Stenfelt, Pandya, Baniel, ZTE, and ETSI. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies and rules in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '286 patent, to the extent the references charted in any of Exhibits B1 to B7 do not disclose “if it is determined that such a NASReq session object does not exist, creating such a NASReq session object,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Li, Shim, Stenfelt, Pandya, Baniel, ZTE, and

ETSI. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies and rules in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '286 patent, to the extent the references charted in any of Exhibits B1 to B7 do not disclose “if it is determined that such a NASReq session object does exist, updating the NASReq session object to reflect information in the NASReq message,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Li, Shim, Stenfelt, Pandya, Baniel, ZTE, and ETSI. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and managing policies and rules in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '286 patent, to the extent the references charted in any of Exhibits B1 to B7 do not disclose “the selected PCRF cluster generating and sending a response to the NASReq message if the NASReq message requires a response,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A, including, at least, Li, Shim, Stenfelt, Pandya, Baniel, ZTE, and ETSI. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of configuring and

managing policies and rules in a network. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to configure and manage policies in a network. And as discussed above, it was known how to send mapping policies. Issuing commands to reconfigure a router, including reconfiguration commands based on a policy such as a mapping policy, were also known. A person of ordinary skill would have been motivated to look at how other products and systems send mapping policies to network devices and issue new commands to reconfigure routers based on policies such as mapping policies. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

3. U.S. Patent No. 8,441,721 – Exemplary Motivations to Combine

Defendant has identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge of a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

It would have been obvious to combine each of the references discussed below because they are analogous art generally directed to the control of Raman amplifiers for optical communication applications. For example:

- For the Asserted Claims of the '721 patent, to the extent the references charted in any of Exhibits C1 to C10 do not disclose “determining deviations of respective measured channel powers from respective target channel powers,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix C, including, at least, ONS 15454, FSP 3000, PureGain, Sugaya, Nakata,

Zhou, Frankel, Kilper, Bengtsson, and Zhang I. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods directed to the control of Raman amplifiers in optical communications applications. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to utilize and control Raman amplifiers in optical communications applications. And as discussed above, it was known how to monitor, assess deviations from target measurements, and control laser pumps to meet target optical power. A person of ordinary skill would have been motivated to look at how other products and systems control Raman amplifiers to meet the optical power targets. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '721 patent, to the extent the references charted in any of Exhibits C1 to C10 do not disclose “projecting the deviations into a space that defines Raman gain profiles achievable with a set of channels and pump lasers whereby projected deviations are formed,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix C, including, at least, ONS 15454, FSP 3000, PureGain, Sugaya, Nakata, Zhou, Frankel, Kilper, Bengtsson, and Zhang I. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods directed to the control of Raman amplifiers in optical communications applications. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to utilize and control Raman amplifiers in optical communications applications. And as discussed above, it was known how to monitor, assess deviations from target measurements, and control laser pumps to meet target optical power. A person of ordinary skill would have been motivated to look at how other products and systems control Raman amplifiers to meet the optical power targets. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '721 patent, to the extent the references charted in any of Exhibits C1 to C10 do not disclose “determining power setting values for the pump lasers based on the projected deviations,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix C, including, at least, ONS 15454, FSP 3000, PureGain, Sugaya, Nakata, Zhou, Frankel, Kilper, Bengtsson, and Zhang I. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods directed to the control of Raman amplifiers in optical communications applications. It is the nature of software and networking solution companies to monitor developments in competing products and

combine relevant features and functionalities. It was common in this area to utilize and control Raman amplifiers in optical communications applications. And as discussed above, it was known how to monitor, assess deviations from target measurements, and control laser pumps to meet target optical power. A person of ordinary skill would have been motivated to look at how other products and systems control Raman amplifiers to meet the optical power targets. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '721 patent, to the extent the references charted in any of Exhibits C1 to C10 do not disclose “applying the power setting values determined to the pump lasers,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix C, including, at least, ONS 15454, FSP 3000, PureGain, Sugaya, Nakata, Zhou, Frankel, Kilper, Bengtsson, and Zhang I. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods directed to the control of Raman amplifiers in optical communications applications. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to utilize and control Raman amplifiers in optical communications applications. And as discussed above, it was known how to monitor, assess deviations from target measurements, and control laser pumps to meet target optical power. A person of ordinary skill would have been motivated to look at how other products and systems control Raman amplifiers to meet the optical power targets. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '721 patent, to the extent the references charted in any of Exhibits C1 to C10 do not disclose “compensating the deviations for fiber propagation loss,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix C, including, at least, ONS 15454, FSP 3000, PureGain, Sugaya, Nakata, Zhou, Frankel, Kilper, Bengtsson, and Zhang I. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods directed to the control of Raman amplifiers in optical communications applications. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to utilize and control Raman amplifiers in optical communications applications. And as discussed above, it was known how to monitor, assess deviations from target measurements, and control laser pumps to meet target optical power. A person of ordinary skill would have been motivated to look at how other products and systems control Raman amplifiers to meet the optical power targets.

These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

4. U.S. Patent No. 8,982,691 – Exemplary Motivations to Combine

Defendant has identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge of a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

It would have been obvious to combine each of the references discussed below because they are analogous art generally directed to communication networks and, more specifically, to failure protection in networks. For example:

- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “a method performed by a network processor of a Multiprotocol Label Switching (MPLS) label switch router for providing a Backup Label Switched Path (LSP) to a Bypass LSP already established for a Protected Primary LSP,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to provide a backup path to a backup path already established for a primary path. A person of ordinary skill would have been motivated to look at how other products and systems implement failure protection in networks. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there

would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “protecting the Primary LSP against dual failures,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to provide dual failure protection to links or paths in networks. A person of ordinary skill would have been motivated to look at how other products and systems implement failure protection in networks. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “establishing the Bypass LSP for the Protected Primary LSP having a Point of Local Repair node and a Merge Point node,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to establish backup paths to primary paths. A person of ordinary skill would have been motivated to look at how other products and systems implement path or link protection by establishing backup or bypass paths or links to primary paths or links. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to obtain nodes traversed by an end-to-end path. A person of ordinary skill would have been motivated to look at how other products and systems obtain or identify nodes traversed by a particular path. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “generating a request to a path calculator using the nodes traversed by said end-to-end path of said Bypass LSP for a disjoint path connecting said Point of Local Repair Node to said Merge Point node,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to generate requests that include or identify particular nodes to path calculators. A person of ordinary skill would have been motivated to look at how other products and systems generate requests to path calculators or calculate paths. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “receiving a response from said path calculator,” it

would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to receive responses from path calculators or receive calculated paths. A person of ordinary skill would have been motivated to look at how other products and systems receive calculated paths or receive paths from path calculators. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “in response to determining that a fully disjoint path connecting said Point of Local Repair Node to said Merge Point node is available, signaling, to at least one other MPLS label switch router, said fully disjoint path as the Backup LSP to said Bypass LSP,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to determine a fully disjoint path and determine whether that path is available, and how to signal paths to another router. A person of ordinary skill would have been motivated to look at how other products and systems calculate and determine the availability of disjoint paths and communicate between routers. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose a “constraint based shortest path first calculator,” it would have been obvious to combine any of these charted references with any of the other

charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, path calculators and calculation techniques were known. A person of ordinary skill would have been motivated to look at how other products and systems implement path calculators. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “determining that the fully disjoint path connecting said Point of Local Repair Node to said Merge Point node is not available,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to determine fully disjoint paths and whether those paths are available. A person of ordinary skill would have been motivated to look at how other products and systems calculate and determine the availability of disjoint paths. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “determining that a partially disjoint path connecting said Point of Local Repair Node to said Merge Point node is not available,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure

protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to determine partially disjoint paths and whether those paths are available. A person of ordinary skill would have been motivated to look at how other products and systems calculate and determine the availability of disjoint paths. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “signaling, to at least one other MPLS label switch router, said partially disjoint path as the Backup LSP to said Bypass LSP,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to signal paths to routers. A person of ordinary skill would have been motivated to look at how other products and systems signal backup paths to routers. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “signaling an error on the attempt to provide a Backup LSP,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to determine or calculate paths and determine whether those paths are available and to signal

whether those attempts are successful. A person of ordinary skill would have been motivated to look at how other products and systems signal errors on attempts to provide backup paths. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “procuring a Shared Risk Link Groups (SRLG) associated with the nodes traversed by the end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to procure or determine shared risk link groups (SRLGs) associated with particular nodes. A person of ordinary skill would have been motivated to look at how other products and systems determine SRLGs associated with particular network nodes. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '691 patent, to the extent the references charted in any of Exhibits D1 to D13 do not disclose “providing said Shared Risk Link Groups as part of said generating a request step to said calculator for use in calculating said disjoint path,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D, including, at least, Hafid, Sadananda, Fujita, Vasseur, Hanif, Harrison, and Park. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of failure protection in networks. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement failure protection in networks, such as MPLS networks. And as discussed above, it was known how to provide SRLGs as part of a request to a path calculator or consider the SRLGs as part of the path calculation. A person of ordinary skill would have been motivated to look at how other

products and systems perform path calculations or determinations, including how systems consider SRLGs when calculating disjoint paths. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

5. U.S. Patent No. 9,450,884 – Exemplary Motivations to Combine

Defendant has identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge of a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

It would have been obvious to combine each of the references discussed below because they are analogous art generally directed to bandwidth allocation and/or scheduling at communication network ports. For example:

- For the Asserted Claims of the '884 patent, to the extent the references charted in any of Exhibits E1 to E30 do not disclose “monitoring, by the network switching element, a data flow traversing the target port of the network switching element,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix E, including, at least, Catalyst 3850, Arista 7500, AL 7750, Suzuki, Dong, Kumar, DeCusatis, Zhang-929, Bonomi, Kalkunte, Moore, Callocchia, Feroz, Porat, Hoichman, Iny, Chen, Beheshti-Zavareh, Kanda, RCP, D3, Ansari, Jin, OpenTCP, Ma, Suzuki-807, Peterson, Chen-616, Zhang II, and Zhang-2013. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of bandwidth allocation, buffer management, scheduling, and queuing at network ports. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement network port resource optimization techniques, such as monitoring and allocating bandwidth, or scheduling and

queue managing. And as discussed above, it was known how to monitor and optimize network traffic at the port level. A person of ordinary skill would have been motivated to look at how other products and systems perform bandwidth allocation and/or scheduling at communication network ports. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '884 patent, to the extent the references charted in any of Exhibits E1 to E30 do not disclose “determining, by the network switching element, a bandwidth allocation for the target port, the bandwidth allocation for the target port being a bandwidth that is currently allocated for the data flow,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix E, including, at least, Catalyst 3850, Arista 7500, AL 7750, Suzuki, Dong, Kumar, DeCusatis, Zhang-929, Bonomi, Kalkunte, Moore, Callocchia, Feroz, Porat, Hoichman, Iny, Chen, Beheshti-Zavareh, Kanda, RCP, D3, Ansari, Jin, OpenTCP, Ma, Suzuki-807, Peterson, Chen-616, Zhang II, and Zhang-2013. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of bandwidth allocation, buffer management, scheduling, and queuing at network ports. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement network port resource optimization techniques, such as monitoring and allocating bandwidth, or scheduling and queue managing. And as discussed above, it was known how to monitor and optimize network traffic at the port level. A person of ordinary skill would have been motivated to look at how other products and systems perform bandwidth allocation and/or scheduling at communication network ports. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '884 patent, to the extent the references charted in any of Exhibits E1 to E30 do not disclose “determining, by the network switching element, a fair-share bandwidth allocation for the target port, the fair-share bandwidth allocation being a proportional allocation of a total bandwidth of the network switching element,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix E, including, at least, Catalyst 3850, Arista 7500, AL 7750, Suzuki, Dong, Kumar, DeCusatis, Zhang-929, Bonomi, Kalkunte, Moore, Callocchia, Feroz, Porat, Hoichman, Iny, Chen, Beheshti-Zavareh, Kanda, RCP, D3, Ansari, Jin, OpenTCP, Ma, Suzuki-807, Peterson, Chen-616, Zhang II, and Zhang-2013. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of bandwidth allocation, buffer management, scheduling, and queuing at network ports. It is the nature of software and networking

solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement network port resource optimization techniques, such as monitoring and allocating bandwidth, or scheduling and queue managing. And as discussed above, it was known how to monitor and optimize network traffic at the port level. A person of ordinary skill would have been motivated to look at how other products and systems perform bandwidth allocation and/or scheduling at communication network ports. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '884 patent, to the extent the references charted in any of Exhibits E1 to E30 do not disclose “adjusting, by the network switching element, the bandwidth allocation for the target port based on the fair-share bandwidth allocation,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix E, including, at least, Catalyst 3850, Arista 7500, AL 7750, Suzuki, Dong, Kumar, DeCusatis, Zhang-929, Bonomi, Kalkunte, Moore, Callocchia, Feroz, Porat, Hoichman, Iny, Chen, Beheshti-Zavareh, Kanda, RCP, D3, Ansari, Jin, OpenTCP, Ma, Suzuki-807, Peterson, Chen-616, Zhang II, and Zhang-2013. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of bandwidth allocation, buffer management, scheduling, and queuing at network ports. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement network port resource optimization techniques, such as monitoring and allocating bandwidth, or scheduling and queue managing. And as discussed above, it was known how to monitor and optimize network traffic at the port level. A person of ordinary skill would have been motivated to look at how other products and systems perform bandwidth allocation and/or scheduling at communication network ports. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.
- For the Asserted Claims of the '884 patent, to the extent the references charted in any of Exhibits E1 to E30 do not disclose “determining, by the network controller, an over-subscription ratio, the over-subscription ratio being a ratio of the bandwidth allocation of the target port to a number of data flows traversing the target part,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix E, including, at least, Catalyst 3850, Arista 7500, AL 7750, Suzuki, Dong, Kumar, DeCusatis, Zhang-929, Bonomi, Kalkunte, Moore, Callocchia, Feroz, Porat, Hoichman, Iny, Chen, Beheshti-Zavareh, Kanda, RCP, D3, Ansari, Jin, OpenTCP, Ma, Suzuki-807, Peterson, Chen-616, Zhang II, and Zhang-2013. A person of skill in the art would be motivated to combine these references because they each disclose

systems and/or methods of bandwidth allocation, buffer management, scheduling, and queuing at network ports. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement network port resource optimization techniques, such as monitoring and allocating bandwidth, or scheduling and queue managing. And as discussed above, it was known how to monitor and optimize network traffic at the port level. A person of ordinary skill would have been motivated to look at how other products and systems perform bandwidth allocation and/or scheduling at communication network ports. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '884 patent, to the extent the references charted in any of Exhibits E1 to E30 do not disclose a “Software Defined Networking (SDN) controller for adjusting bandwidth allocation in a communications network, the SDN controller being configured to control an aggregation switch, the aggregation switch including a target port,” it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix E, including, at least, Catalyst 3850, Arista 7500, AL 7750, Suzuki, Dong, Kumar, DeCusatis, Zhang-929, Bonomi, Kalkunte, Moore, Callocchia, Feroz, Porat, Hoichman, Iny, Chen, Beheshti-Zavareh, Kanda, RCP, D3, Ansari, Jin, OpenTCP, Ma, Suzuki-807, Peterson, Chen-616, Zhang II, and Zhang-2013. A person of skill in the art would be motivated to combine these references because they each disclose systems and/or methods of bandwidth allocation, buffer management, scheduling, and queuing at network ports. It is the nature of software and networking solution companies to monitor developments in competing products and combine relevant features and functionalities. It was common in this area to implement network port resource optimization techniques, such as monitoring and allocating bandwidth, or scheduling and queue managing. And as discussed above, it was known how to monitor and optimize network traffic at the port level. A person of ordinary skill would have been motivated to look at how other products and systems perform bandwidth allocation and/or scheduling at communication network ports. These combinations would have also been obvious to try, given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

III. INVALIDITY UNDER 35 U.S.C. § 112

Defendant alleges that the Asserted Claims are invalid under 35 U.S.C. § 112 as indefinite (Section 112, ¶ 2) and for failing to satisfy the written description and enablement requirements

(Section 112, ¶ 1). Defendant reserves all rights to amend its Invalidity Contentions under 35 U.S.C. § 112, including after the Asserted Claims are ultimately construed by the Court, in response to any interpretation of the Asserted Claims embodied in Brazos’s infringement positions, and/or to account for any changes in the law concerning invalidity under 35 U.S.C. § 112. Defendant also reserves the right to provide additional explanation and/or argument for its Invalidity Contentions under Section 112, including, for example, based on expert testimony. Defendant’s contentions that the Asserted Claims are invalid under Section 112 are not admissions regarding the construction or scope of the claims of the Asserted Patents, or that any of the claims of the Asserted Patents are not anticipated or rendered obvious by any prior art. All of the below statements are by way of example only. Any item disclosed below with respect to any patent or claim may, as appropriate, be asserted as a defense against any other patent or claim that has a similar claim limitation and patent disclosure.

A. INVALIDITY UNDER 35 U.S.C. § 112, ¶ 1

35 U.S.C. § 112, ¶ 1 requires that the specification contain a written description of the invention. “[T]he hallmark of written description is disclosure.” *Boston Sci. Corp. v. Johnson & Johnson*, 647 F.3d 1353, 1361–62 (Fed. Cir. 2011) (citation omitted). The test for whether a specification adequately describes an invention is “whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date. . . . [T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art [It] is a question of fact.” *Ariad Pharms., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*); *Boston Sci. Corp.*, 647 F.3d at 1362.

The enablement requirement of Section 112 demands that the patent specification enable “those skilled in the art to make and use the full scope of the claimed invention without ‘undue

experimentation.” *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997) (quoting *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993)). “[T]he scope of the claims must be less than or equal to the scope of the enablement.” *Nat’l Recovery Tech., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1196 (Fed. Cir. 1999). In other words, the claims must be enabled over their entire claimed range. *See id.* (finding lack of enablement because the “claim [] [was] broader than the enablement as taught in the specification”).

Defendant contends that the following Asserted Claims are invalid under 35 U.S.C. § 112, ¶ 1. Each Asserted Claim identified below (and each Asserted Claim that depends therefrom) is invalid under Section 112, ¶ 1 because the specification of the Asserted Patent fails to provide a sufficient written description, and/or enabling disclosure. For each listed term or phrase, Defendant believes the term or phrase is invalid under Section 112, ¶ 1, as is any limitation including such terms or phrases, for the same reason(s).

Defendant further contends that Brazos’s apparent claim constructions render the asserted claims extremely broad in scope and well beyond the purported inventions described in the Patents-in-Suit. Based on a review of Brazos’s Infringement Contentions, Brazos is attempting to construe the Patent-in-Suit in an idiosyncratic manner that is entirely inconsistent with the written specifications and prosecution histories of the Patents-in-Suit as well as with the understanding of one of ordinary skill in the art at the time the applications that issued as the Patents-in-Suit were filed. These allegations are inconsistent with the plain language of the claims, the supporting description, and the prosecution history.

The Asserted Claims are invalid because the specification of the Patents-in-Suit do not include sufficient written description of the purported inventions allegedly claimed in the Patents-in-Suit, and the manner and process of making and using it, in such full, clear, concise and exact

terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use any of the allegedly claimed inventions, 35 U.S.C. § 112, ¶ 1.

Moreover, the patent applications that issued as the Patents-in-Suit did not contain a written description of the purported invention sufficiently clear and complete to enable one of ordinary skill in the art to which the purported invention pertains to make and use the invention as claimed without undue experimentation. *Id.* To the extent any of the Asserted Claims are found to cover one or more of the accused products identified in Brazos’s Infringement Contentions, such Asserted Claims are also invalid under 35 U.S.C. § 112, ¶ 1 because their full scope is not enabled by the specifications of the relevant Patents-in-Suit.

1. U.S. Patent No. 7,386,630

Defendant contends that the full scope of each Asserted Claim of the ’630 patent was not described with particularity in the specification to which priority is sought, so as not to set forth enough detail to allow a person of ordinary skill in the art to understand what is claimed and to recognize that the inventor invented what is claimed. Accordingly, each Asserted Claim of the ’630 patent is invalid for lack of adequate written description and/or enablement under 35 U.S.C. § 112, ¶ 1, based at least on the following claim terms/phrases:

- “mapping policy” (claims 18, 23)
- “defining a mapping policy” (claim 18)
- “experimental field” (claim 18)
- “defining a customer policy” (claim 18)
- “tunnel group identifier” (claim 18)
- “defining a network policy” (claim 18)
- “translating the mapping policy, the network policy and the customer policy” (claim 18)
- “device-specific commands” (claim 18)

- “policy targets” (claim 18)
- “role name” (claim 18)
- “sending is such that the interfaces associate with at least one of input roles” (claim 22)
- “input roles” (claim 22)
- “output roles” (claim 22)
- “customer source and destination host groups” (claim 22)

Further, under at least the claim interpretations upon which Plaintiff apparently relies for its infringement assertions, the Asserted Claims would be invalid for failure to satisfy the written description and/or enablement requirements because they would be drawn to subject matter that exceeds or otherwise differs from that which one of ordinary skill in the art would understand the named inventors to have had in their possession. Plaintiff’s infringement allegations require numerous claim terms to be interpreted more broadly than the Asserted Patents disclose or enable. A person of skill in the art, upon reviewing the patents and the claims, would not consider the technology that Plaintiff seeks to cover in its infringement contentions to be in the possession of the inventors.

2. U.S. Patent No. 8,498,286

Defendant contends that the full scope of each Asserted Claim of the ’286 patent was not described with particularity in the specification to which priority is sought, so as not to set forth enough detail to allow a person of ordinary skill in the art to understand what is claimed and to recognize that the inventor invented what is claimed. Accordingly, each Asserted Claim of the ’286 patent is invalid for lack of adequate written description and/or enablement under 35 U.S.C. § 112, ¶ 1, based at least on the following claim terms/phrases:

- “enabling a communication session” (claim 1)
- “translating the Radius message” (claim 1)

- “handle a communication session” (claim 1)
- “configured to handle communication sessions” (claims 1, 7)
- “determining whether ... message exists” (claim 1)
- “updating ... to reflect information” (claim 1)
- “generating and sending a response to ... if ... requires a response” (claim 1)
- “creating or updating ... in response to receiving” (claim 7)

Each of the Asserted Claims of the '286 patent is invalid for lack of written description and/or is not enabled. Further, under at least the claim interpretations upon which Plaintiff apparently relies for its infringement assertions, the Asserted Claims would be invalid for failure to satisfy the written description and/or enablement requirements because they would be drawn to subject matter that exceeds or otherwise differs from that which one of ordinary skill in the art would understand the named inventors to have had in their possession. Plaintiff's infringement allegations require numerous claim terms to be interpreted more broadly than the Asserted Patents disclose or enable. A person of skill in the art, upon reviewing the patents and the claims, would not consider the technology that Plaintiff seeks to cover in its infringement contentions to be in the possession of the inventors.

3. U.S. Patent No. 8,441,721

Defendant contends that the full scope of each Asserted Claim of the '721 patent was not described with particularity in the specification to which priority is sought, so as not to set forth enough detail to allow a person of ordinary skill in the art to understand what is claimed and to recognize that the inventor invented what is claimed. Accordingly, each Asserted Claim of the '721 patent is invalid for lack of adequate written description and/or enablement under 35 U.S.C. § 112, ¶ 1, based at least on the following claim terms/phrases:

- “projecting the deviations into a space that defines Raman gain profiles” (claim 1)

- “whereby projected deviations are formed” (claims 1, 19)
- “determining power setting values for the pump lasers based on the projected deviations” (claim 1)
- “compensating the deviations for fiber propagation loss” (claims 4, 21)
- “determine deviations of respective measured channel powers from respective target channel powers” (claim 19)
- “determine power setting values for the pump lasers based on the projected deviations” (claim 19)

Each of the Asserted Claims of the ’721 patent is invalid for lack of written description and/or is not enabled. Further, under at least the claim interpretations upon which Plaintiff apparently relies for its infringement assertions, the Asserted Claims would be invalid for failure to satisfy the written description and/or enablement requirements because they would be drawn to subject matter that exceeds or otherwise differs from that which one of ordinary skill in the art would understand the named inventors to have had in their possession. Plaintiff’s infringement allegations require numerous claim terms to be interpreted more broadly than the Asserted Patents disclose or enable. A person of skill in the art, upon reviewing the patents and the claims, would not consider the technology that Plaintiff seeks to cover in its infringement contentions to be in the possession of the inventors.

4. U.S. Patent No. 8,982,691

Defendant contends that the full scope of each Asserted Claim of the ’691 patent was not described with particularity in the specification to which priority is sought, so as not to set forth enough detail to allow a person of ordinary skill in the art to understand what is claimed and to recognize that the inventor invented what is claimed. Accordingly, each Asserted Claim of the ’691 patent is invalid for lack of adequate written description and/or enablement under 35 U.S.C. § 112, ¶ 1, based at least on the following claim terms/phrases:

- “providing a Backup Label Switched Path (LSP) to a Bypass LSP already established for a Protected Primary LSP” (claims 1, 6)
- “protecting the Primary LSP against dual failures” (claims 1, 6)
- “establishing the Bypass LSP for the Protected Primary LSP having a Point of Local Repair node and a Merge Point node” (claims 1, 6)
- “obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node” (claims 1, 6)
- “generating a request to a path calculator using the nodes traversed by said end-to-end path of said Bypass LSP for a disjoint path connecting said Point of Local Repair Node to said Merge Point node” (claims 1, 6)
- “receiving a response from said path calculator” (claims 1, 6)
- “in response to determining that a fully disjoint path connecting said Point of Local Repair Node to said Merge Point node is available, signaling, to at least one other MPLS label switch router, said fully disjoint path as the Backup LSP to said Bypass LSP” (claims 1, 6)
- “in response to determining that the fully disjoint path connecting said Point of Local Repair Node to said Merge Point node is not available” (claims 3, 8)
- “in response to determining that a partially disjoint path connecting said Point of Local Repair Node to said Merge Point node is available” (claims 3, 8)
- “signaling, to at least one other MPLS label switch router, said partially disjoint path as the Backup LSP to said Bypass LSP” (claims 3, 8)
- “in response to determining that a partially disjoint path connecting said Point of Local Repair Node to said Merge Point node is not available” (claims 4, 9)
- “procuring a Shared Risk Link Groups (SRLG) associated with the nodes traversed by the end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node” (claims 5, 10)
- “providing said Shared Risk Link Groups as part of said generating a request step to said calculator for use in calculating said disjoint path” (claims 5, 10)

Each of the Asserted Claims of the '691 patent is invalid for lack of written description and/or is not enabled. Further, under at least the claim interpretations upon which Plaintiff apparently relies for its infringement assertions, the Asserted Claims would be invalid for failure

to satisfy the written description and/or enablement requirements because they would be drawn to subject matter that exceeds or otherwise differs from that which one of ordinary skill in the art would understand the named inventors to have had in their possession. Plaintiff's infringement allegations require numerous claim terms to be interpreted more broadly than the Asserted Patents disclose or enable. A person of skill in the art, upon reviewing the patents and the claims, would not consider the technology that Plaintiff seeks to cover in its infringement contentions to be in the possession of the inventors.

5. U.S. Patent No. 9,450,884

Defendant contends that the full scope of each Asserted Claim of the '884 patent was not described with particularity in the specification to which priority is sought, so as not to set forth enough detail to allow a person of ordinary skill in the art to understand what is claimed and to recognize that the inventor invented what is claimed. Accordingly, each Asserted Claim of the '884 patent is invalid for lack of adequate written description and/or enablement under 35 U.S.C. § 112, ¶ 1, based at least on the following claim terms/phrases:

- “adjusting bandwidth allocation” (claims 1, 11, 17, 20)
- “determining ... bandwidth allocation” (claims 1, 11)
- “determine a bandwidth allocation” (claims 17, 20)
- “determining ... a fair-share bandwidth allocation” (claims 1, 11)
- “determine a fair-share bandwidth allocation” (claims 17, 20)
- “adjusting ... bandwidth allocation for the target port based on the fair-share bandwidth allocation” (claims 1, 11)
- “adjust the bandwidth allocation for the target port based on the fair-share bandwidth allocation” (claims 17, 20)
- “determining ... an over-subscription ratio” (claim 17)
- “determine an over-subscription ratio” (claim 20)

- “transmitting ... the over-subscription ratio to the network switching element based on the over-subscription ratio and a threshold value” (claim 17)
- “transmit the over-subscription ratio to the aggregation switch based on the over-subscription ratio and a threshold value” (claim 20)

Each of the Asserted Claims of the '884 patent is invalid for lack of written description and/or is not enabled. Further, under at least the claim interpretations upon which Plaintiff apparently relies for its infringement assertions, the Asserted Claims would be invalid for failure to satisfy the written description and/or enablement requirements because they would be drawn to subject matter that exceeds or otherwise differs from that which one of ordinary skill in the art would understand the named inventors to have had in their possession. Plaintiff's infringement allegations require numerous claim terms to be interpreted more broadly than the Asserted Patents disclose or enable. A person of skill in the art, upon reviewing the patents and the claims, would not consider the technology that Plaintiff seeks to cover in its infringement contentions to be in the possession of the inventors.

B. INVALIDITY UNDER 35 U.S.C. § 112, ¶ 2

Claims are indefinite under 35 U.S.C. § 112, ¶ 2 when they “fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). For example, to the extent an asserted apparatus claim includes both apparatus and method limitations, that claim is invalid for indefiniteness under Section 112, ¶ 2 because it fails to identify or notify the public of what constitutes direct infringement. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377 (Fed. Cir. 2005). Similarly, a claim that uses means-plus function claiming is indefinite “[i]f the patentee fails to disclose adequate corresponding structure.” *Williamson v. Citrix Online, LLC*, 792 F. 3d 1339, 1352 (Fed. Cir. 2015). A claim can also be found indefinite if it uses terms of degree. *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). As the Federal Circuit has

“explained, a term of degree fails to provide sufficient notice of its scope if it depends ‘on the unpredictable vagaries of any one person’s opinion.’” *Id.* (citation omitted). In addition, “a claim term that lacks an antecedent basis may . . . render a claim indefinite.” *In re Downing*, 754 F. App’x 988, 996 (Fed. Cir. 2018).

Defendant contends that the following Asserted Claims are invalid under Section 112, ¶ 2. Each Asserted Claim identified below (and each Asserted Claim that depends therefrom) is invalid under Section 112, ¶ 2 because they fail to inform, with reasonable certainty, those skilled in the art about the scope of the claimed invention. For each listed term or phrase, Defendant believes the term or phrase is invalid under Section 112, ¶ 2, and any limitation including such term or phrase is also indefinite.

1. U.S. Patent No. 7,386,630

- “mapping policy” (claims 18, 23)
- “defining a mapping policy” (claim 18)
- “experimental field” (claim 18)
- “defining a customer policy” (claim 18)
- “tunnel group identifier” (claim 18)
- “defining a network policy” (claim 18)
- “aggregated traffic” (claim 18)
- “translating the mapping policy, the network policy and the customer policy” (claim 18)
- “device-specific commands” (claim 18)
- “policy targets” (claim 18)
- “role name” (claim 18)
- “sending is such that the interfaces associate with at least one of input roles, output roles” (claim 22)

- “input roles” (claim 22)
 - “output roles” (claim 22)
 - “customer source and destination host groups” (claim 22)
- 2. U.S. Patent No. 8,498,286**
- “communication session” (claims 1, 7)
 - “handle a communication session” (claim 1)
 - “configured to handle communication sessions” (claims 1, 7)
 - “generating and sending a response to ... if ... requires a response” (claim 1)
- 3. U.S. Patent No. 8,441,721**
- “deviations of respective measured channel powers” (claims 1, 19)
 - “projecting the deviations” (claim 1)
 - “projected deviations” (claims 1, 19)
 - “space that defines Raman gain profiles” (claims 1, 19)
 - “achievable” (claims 1, 19)
 - “whereby projected deviations are formed” (claims 1, 19)
- 4. U.S. Patent No. 8,982,691**
- “providing a Backup Label Switched Path (LSP) to a Bypass LSP already established for a Protected Primary LSP” (claims 1, 6)
 - “Backup Label Switched Path” (claims 1, 6)
 - “Bypass LSP” (claims 1, 6)
 - “Protected Primary LSP” (claims 1, 6)
 - “dual failures” (claims 1, 6)
 - “establishing the Bypass LSP for the Protected Primary LSP” (claims 1, 6)
 - “obtaining the nodes traversed by an end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node” (claims 1, 6)

- “generating a request to a path calculator using the nodes traversed by said end-to-end path of said Bypass LSP for a disjoint path connecting said Point of Local Repair Node to said Merge Point node” (claims 1, 6)
- “receiving a response from said path calculator” (claims 1, 6)
- “determining that a fully disjoint path connecting said Point of Local Repair Node to said Merge Point node is available” (claims 1, 6)
- “signaling, to at least one other MPLS label switch router” (claims 1, 6, 3, 8)
- “signaling, to at least one other MPLS label switch router said fully disjoint path as the Backup LSP to said Bypass LSP” (claims 1, 6)
- “determining that the fully disjoint path connecting said Point of Local Repair Node to said Merge Point node is not available” (claims 3, 8)
- “determining that a partially disjoint path connecting said Point of Local Repair Node to said Merge Point node is available” (claims 3, 8)
- “signaling, to at least one other MPLS label switch router, said partially disjoint path as the Backup LSP to said Bypass LSP” (claims 3, 8)
- “determining that a partially disjoint path connecting said Point of Local Repair Node to said Merge Point node is not available” (claims 4, 9)
- “procuring a Shared Risk Link Groups (SRLG) associated with the nodes traversed by the end-to-end path of said Bypass LSP from said Point of Local Repair Node to said Merge Point node” (claims 5, 10)
- “providing said Shared Risk Link Groups as part of said generating a request step to said calculator for use in calculating said disjoint path” (claims 5, 10)

5. U.S. Patent No. 9,450,884

- “bandwidth allocation” (claims 1, 11, 17, 20)
- “adjusting bandwidth allocation” (claims 1, 11, 17, 20)
- “determining ... bandwidth allocation” (claims 1, 11)
- “determine a bandwidth allocation” (claims 17, 20)
- “fair-share bandwidth allocation” (claims 1, 11, 17, 20)
- “determining ... a fair-share bandwidth allocation” (claims 1, 11)
- “determine a fair-share bandwidth allocation” (claims 17, 20)

- “over-subscription ratio” (claim 17, 20)

IV. ACCOMPANYING DOCUMENT PRODUCTION

Pursuant to Local Patent Rules 3-3 and 3-4, Defendant has produced all prior art referenced in its Invalidity Contentions as well as source code, specifications, schematics, flow charts, artwork, formulas, or other documentation sufficient to show the operation of any aspects or elements of an Accused Instrumentality identified by Brazos in its Infringement Contentions. Defendant will promptly produce any documents uncovered during discovery, including through third-party subpoenas.

Dated: September 23, 2024

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CERTIFICATE OF SERVICE

I hereby certify that on September 23, 2024, the foregoing was served upon all counsel of record who have consented to electronic service.

/s/ Brian A. Rosenthal
Brian A. Rosenthal