

Summary of verbatim (or nearly verbatim) matches between the 1088 petition to the Min Declaration Ex.1003

	‘1088 Petition	Min Decl. (Ex. 1003)
1	A ring network is a type of computer network topology where each device (node) is connected to two other nodes, forming a circular pathway for data transmission. Data travels in one or both directions (i.e., clockwise or counterclockwise) around the ring until it reaches its destination. Ex.1003, ¶¶27-28. 1088 Petition, p. 8	A ring network is a type of computer network topology where each device (node) is connected to two other nodes in the same ring, forming a circular pathway for data transmission. Ring topologies allow the data to travels in one or both directions (i.e., clockwise or counterclockwise) around the ring until it reaches its destination. Ex. 1003, ¶ 27
2	Fault protection in networks involves strategies and technologies to prevent, detect, and recover from failures. Fault protection thus facilitates reliable communication and minimal downtime. These protections promote stable and efficient network operations. Ex.1003, ¶¶29-31. 1088 Petition, p. 8	Fault protection in networks involves strategies and technologies to prevent, detect, and recover from failures. Fault protection thus ensures reliable communication and minimal downtime. These protections are essential for maintaining stable and efficient network operations. Ex. 1003, ¶ 29
3	Boolean logic is widely used in digital circuits and computer programming. Bitwise Boolean logic operates at the binary level, manipulating individual bits within numbers. When Boolean logic is represented by binary numbers, a value of “true” is represented by a ‘1’ and a value of “false” is represented by a ‘0.’ Ex.1003, ¶32 Boolean logic involves logical operations such as AND, OR, and NOT to manipulate and evaluate binary numbers. For example, when	Boolean logic is widely used in digital circuits and computer programming. Bitwise Boolean logic operates at the binary level, manipulating individual bits within numbers. When Boolean logic is represented by binary numbers, often a value of “true” is represented by a ‘1’ and a value of “false” is represented by a ‘0.’ Boolean logic involves logical operations such as AND, OR, and NOT to manipulate and evaluate binary numbers. For example, when two bits are ANDed, the result is true

	‘1088 Petition	Min Decl. (Ex. 1003)
	two bits are ANDed, the result is true (‘1’) only if both bits are also true (‘1’), as shown in the following truth table. Ex.1003, ¶33. [image omitted] Ex.1006, 37. As can be seen, the only case were the result of P AND Q is true (a ‘1’) is where both P and Q are also true. Ex.1003, ¶34. Boolean logic would have been within the background knowledge of a POSITA. The ’859 patent refers to Boolean logic operations, but does not explain those operations—thus confirming they would have been understood by a POSITA. <i>See also</i> Ex.1008, 8:49-50 (information can be “combined according to the well-known rules of Boolean logic”); Ex.1009, 7:37 (“[B]oolean logic, well known to those skilled in the art”). Ex.1003, ¶35. 1088 Petition, pp. 8-9	(‘1’) only if both bits are also true (‘1’), as shown in the following truth table. [image omitted] IEEE Dictionary, 37. As can be seen, the only case when the result of P AND Q is true (a ‘1’) is where both P and Q are also true. Boolean logic would have been within the background knowledge of a POSITA. The ’859 patent refers to Boolean logic operations, but does not explain those operations—thus confirming they would have been understood by a POSITA. <i>See also</i> Murthy, 8:49-50 (information can be “combined according to the well-known rules of Boolean logic”); Fawcett, 7:37 (“boolean logic, well known to those skilled in the art”). Ex. 1003, ¶¶ 32-35
4	The ’859 patent “relates generally to communication networks, and specifically to high-speed packet rings.” Ex.1001, 1:5-6. The ’859 patent describes a “bidirectional ring network 20” that “comprises a plurality of nodes 22, labeled A through C, which are mutually connected by network segments 31, 32, 33, 34, 35, 36, and 37.” Ex.1001,	The ’859 patent “relates generally to communication networks, and specifically to high-speed packet rings.” ’859 patent, 1:5-6. The ’859 patent describes a “bidirectional ring network 20” that “comprises a plurality of nodes 22, labeled A through C, which are mutually connected by network segments 31, 32, 33, 34, 35, 36, and 37.” ’859

	‘1088 Petition	Min Decl. (Ex. 1003)
	3:52-55. “The network segments comprise a bidirectional communication medium, such as optical fibers or conductive wires.” Ex.1001, 3:57-59. “The communication medium is configured to define an inner ring 24, over which packets are conveyed between the nodes in a clockwise direction, and an outer ring 26, over which the packets are conveyed in a counterclockwise direction.” Ex.1001, 3:59-63. The bidirectional ring network is shown in Fig. 1 below. [image omitted] Ex.1001, Fig. 1 (annotated); Ex.1003, ¶36. The ’859 patent describes a “mechanism for rapid fault protection in a ring network.” Ex.1001, 2:16-18. For example, if there is a fault in the network, data that was using the clockwise ring may need to switch to using the counterclockwise ring. “FIG. 3 is a block diagram showing an alternative route taken by the data flow from node F to node B ... following occurrence of a fault in segment 33.” Ex.1001, 4:24-27. [image omitted] Ex.1001, Fig. 3 (annotated); Ex.1003, ¶37.	patent, 3:52-55. “The network segments comprise a bidirectional communication medium, such as optical fibers or conductive wires.” ’859 patent, 3:57-59. “The communication medium is configured to define an inner ring 24, over which packets are conveyed between the nodes in a clockwise direction, and an outer ring 26, over which the packets are conveyed in a counterclockwise direction.” ’859 patent, 3:59-63. The bidirectional ring network is shown in Fig. 1 below. [image omitted] ’859 patent, Fig. 1 (annotated). The ’859 patent describes a “mechanism for rapid fault protection in a ring network.” ’859 patent, 2:16-18. For example, if there is a fault in the network, data that was using the clockwise ring may need to switch to using the counterclockwise ring. “FIG. 3 is a block diagram showing an alternative route taken by the data flow from node F to node B ... following occurrence of a fault in segment 33.” ’859 patent, 4:24-27. [image omitted] ’859 patent, Fig. 3 (annotated). The purported novelty of the ’859 patent is to use a first set of bits to represent the state of each of the

	‘1088 Petition	Min Decl. (Ex. 1003)
	The purported novelty of the ’859 patent is to use a first set of bits to represent the state of each of the segments in the network. This first set of bits is referred to in the ’859 patent as a “<i>general mask</i>.” Ex.1001, 2:61-64 (“constructing the general mask includes assigning a respective general mask bit to each of the segments, indicating whether the segment can be reached following occurrence of the fault”). For example, a “general mask in the absence of any fault in network 20 has the form 0000000.” Ex.1001, 4:54-55. However, “[i]n the situation shown in FIG. 3, the general mask ... would have the form 0000100, wherein the bits run in a counterclockwise direction from segment 31 (least significant [right-most] bit) to segment 37 (most significant [left-most] bit). The third bit is set to ‘1’ to indicate that segment 33 is broken.” Ex.1001, 4:48-52. In addition to the general mask, the nodes use a second set of bits “to represent each of its data flows.” Ex.1001, 4:56-57. This second set of bits is referred to as a “<i>specific mask</i>.” Ex.1001, 2:64-67 (“the specific mask includes assigning a respective specific mask bit to each of the segments, indicating whether the flow was to be conveyed over the segment had the fault not occurred”). As an example, the “specific mask” for a data flow between node F and node B “has the form 0001111, to indicate that	segments in the network. This first set of bits is referred to in the ’859 patent as a “<i>general mask</i>.” ’859 patent, 2:19-30 (“constructing the general mask includes assigning a respective general mask bit to each of the segments, indicating whether the segment can be reached following occurrence of the fault”). For example, a “general mask in the absence of any fault in network 20 has the form 0000000.” ’859 patent, 4:54-55. However, “[i]n the situation shown in FIG. 3, the general mask ... would have the form 0000100, wherein the bits run in a counterclockwise direction from segment 31 (least significant bit) to segment 37 (most significant bit). The third bit is set to ‘1’ to indicate that segment 33 is broken.” ’859 patent, 4:48-52. In addition to the general mask, the nodes use a second set of bits “to represent each of its data flows.” ’859 patent, 4:56-57. This second set of bits is referred to as a “<i>specific mask</i>.” ’859 patent, 2:19-30 (“the specific mask includes assigning a respective specific mask bit to each of the segments, indicating whether the flow was to be conveyed over the segment had the fault not occurred”). As an example, the “specific mask” for a data flow between node F and Node B “has the form 0001111, to indicate that the flow passes through segments 31, 32, 33 and 34.” ’859 patent, 4:61-63.

	‘1088 Petition	Min Decl. (Ex. 1003)
	the flow passes through segments 31, 32, 33 and 34.” Ex.1001, 4:61-63. Both the general mask and the specific mask are used together to determine if a data flow should be rerouted. “In order to determine how to handle the data flow following the fault, node F mathematically superimposes the applicable general and specific masks, preferably by taking the Boolean conjunction (AND) of the masks.” Ex.1001, 4:64-67. “If the conjunction is 0000000, the node can conclude that there is no overlap between this data flow and the failed segments in network 20, and therefore determines that no steering of this flow is required.” Ex.1001, 5:1-4. “In the situation shown in FIG. 3, however, the conjunction of the masks is 0000100 ... In this case, the node concludes that the current data flow overlaps all of the unreachable segments, and therefore steers the data flow around the ring in the opposite direction.” Ex.1001, 5:8-13. However, as will be explained in detail below, it was already known to compare a first set of bits representing working segments with a second set of bits representing data flows, as taught by Omichi. Ex.1003, ¶¶36-41. 1088 Petition, pp. 9-13	Both the general mask and the specific mask are used together to determine if a data flow should be rerouted. “In order to determine how to handle the data flow following the fault, node F mathematically superimposes the applicable general and specific masks, preferably by taking the Boolean conjunction (AND) of the masks.” ’859 patent, 4:64-67. “If the conjunction is 0000000, the node can conclude that there is no overlap between this data flow and the failed segments in network 20, and therefore determines that no steering of this flow is required.” ’859 patent, 5:1-4. “In the situation shown in FIG. 3, however, the conjunction of the masks is 0000100 ... In this case, the node concludes that the current data flow overlaps all of the unreachable segments, and therefore steers the data flow around the ring in the opposite direction.” ’859 patent, 8-13. However, as will be explained in detail below, it was already known to compare a first set of bits representing working segments with a second set of bits representing data flows, as taught by Omichi. Ex. 1003, ¶¶ 36-41
5	The ’859 patent was filed on August 30, 2001. In a first Office Action, all claims were rejected as being	The ’859 patent was filed on August 30, 2001. In a first Office Action, all claims were rejected as being

	‘1088 Petition	Min Decl. (Ex. 1003)
	anticipated by U.S. Patent No. 6,366,556 to Ballintine et al. Ex.1002, 81-84. In response, the Applicant amended the claims to recite additional details about the “general mask” and “specific mask” concepts. [image omitted] The Office then issued an additional rejection under 35 U.S.C. 112 (enablement) and maintained the anticipation rejection of Ballantine. Ex.1002, 108-113. The Applicant then made some minor amendments to “clarify the meaning of the claim.” Ex.1002, 127-138. The Office then issued a notice of allowance. However, again, it was already known to compare a first set of bits representing working segments with a second set of bits representing data flows, as taught by Omichi. 1088 Petition, pp. 13-14	anticipated by U.S. Patent No. 6,366,556 to Ballintine et al. ’859 File History, 88. In response, the Applicant amended the claims to recite additional details about the “general mask” and “specific mask” concepts. [image omitted] The Office then issued an additional rejection under 35 U.S.C. 112 (enablement) and maintained the anticipation rejection of Ballantine. ’859 File History, 110. The Applicant then made some minor amendments to “clarify the meaning of the claim.” ’859 File History, 42-47. The Office then issued a notice of allowance. However, again, it was already known to compare a first set of bits representing working segments with a second set of bits representing data flows, as taught by Omichi. Ex. 1003, ¶¶ 42-44
6	In the context of computers, a mask includes “a pattern of characters that is used to control the retention or elimination of portions of another pattern of characters.” Ex.1006, 668. In other words, a mask may be “a pattern of bits” that is logically combined with another item to “retain or suppress” portions of that data item. Ex.1006, 668. For example, consider the following eight-bit mask: 00000011. If one were to combine (e.g., logically AND) this mask with	In the context of computers, a mask includes “a pattern of characters that is used to control the retention or elimination of portions of another pattern of characters.” IEEE Dictionary, 668. In other words, a mask may be “a pattern of bits” that is logically combined with another item to “retain or suppress” portions of that data item. IEEE Dictionary, 668. For example, consider the following eight-bit mask: 00000011. If one were to combine (e.g., logically AND) this

	‘1088 Petition	Min Decl. (Ex. 1003)
	another data item, the result of that combination (e.g., AND operation) would potentially retain a 1 in only the last two bits. The first six bits would be set to 0. In particular, if the mask 00000011 is combined with the value 10101010, the result would be 00000010. Ex.1003, ¶46. 1088 Petition, pp. 15-16	mask with another data item, the result of that combination (e.g., AND operation) would retain only the last two bits. The first six bits would be eliminated. In particular, if the mask 00000011 is combined with the value 10101010, the result would be 00000010. Ex. 1003, ¶ 46
7	A null value includes the value zero. For example, an eight-bit value that is null would be comprised of eight ‘0’s: 00000000. <i>See</i> Ex.1006, 748. Ex.1003, ¶47. 1088 Petition, p. 16	A null value includes the value zero. For example, an eight-bit value that is null would be comprised of eight ‘0’s: 00000000. <i>See</i> IEEE, 748. Ex. 1003, ¶ 47
8	Like the ’859 patent, Omichi relates to a “ring network comprising a plurality of branch insertion nodes and method of failure recovery of ring network.” Ex.1005, title. Omichi describes a bidirectional “ring network [that] comprises a plurality of branch insertion nodes 1a through 1d that are arranged in a ring shape.” Ex.1005, [0024]. The nodes are connected to each other through segments referred to as ring links: “Ring links 2a through 2d that respectively connect adjacent branch insertion nodes 1a through 1d as shown in FIG. 1 are bidirectional physical transmission paths and constitute clockwise ring transmission paths and counterclockwise ring transmission paths.” Ex.1005, [0025]. The bidirectional ring network is shown in Fig. 1 below.	Like the ’859 patent, Omichi relates to a “ring network comprising a plurality of branch insertion nodes and method of failure recovery of ring network.” Omichi, title. Omichi describes a bidirectional “ring network [that] comprises a plurality of branch insertion nodes 1a through 1d that are arranged in a ring shape.” Omichi, [0024]. The nodes are connected to each other through segments referred to as ring links: “Ring links 2a through 2d that respectively connect adjacent branch insertion nodes 1a through 1d as shown in FIG. 1 are bidirectional physical transmission paths and constitute clockwise ring transmission paths and counterclockwise ring transmission paths.” Omichi, [0025]. The bidirectional ring network is shown in Fig. 1 below.

	‘1088 Petition	Min Decl. (Ex. 1003)
	[image omitted] Ex.1005, Fig. 1 (annotated); Ex.1003, ¶54. Omichi describes an example in which data is routed along a “working path,” as shown in Fig. 3 below. “FIG. 3 describes the working path of a virtual path. A working path is a virtual path that is normally used.” Ex.1005, [0030]. [image omitted] Ex.1005, Fig. 3 (annotated); Ex.1003, ¶55. However, when there is a fault in the working path, Omichi’s system reroutes the data flow to a “protection path.” “FIG. 4 is used to describe a protection path for a virtual path. A protection path is a virtual path that is used to circumvent a failure when a failure occurs on a ring network.” Ex.1005, [0031]. [image omitted] Ex.1005, Fig. 4 (annotated); Ex.1003, ¶56. To make the decision to reroute a data flow, Omichi uses the same technique described in the ’859 patent—comparing a first set of bits representing the available ring links	[image omitted] Omichi, Fig. 1 (annotated). Omichi, describes an example in which data is routed along a “working path,” as shown in Fig. 3 below. “FIG. 3 describes the working path of a virtual path. A working path is a virtual path that is normally used.” Omichi, [0030]. [image omitted] Omichi, Fig. 3 (annotated). However, when there is a fault in the working path, Omichi’s system reroutes the data flow to a “protection path.” “FIG. 4 is used to describe a protection path for a virtual path. A protection path is a virtual path that is used to circumvent a failure when a failure occurs on a ring network.” Omichi, [0031]. [image omitted] Omichi, Fig. 4 (annotated). To make the decision to reroute a data flow, Omichi uses the same technique described in the ’859 patent—comparing a first set of bits representing the available ring links

	‘1088 Petition	Min Decl. (Ex. 1003)
	with a second set of bits representing the desired path. Omichi describes using a first set of bits in the form of a ring link failure table, as illustrated in Fig. 6a below. “The ring link failure table shown in FIG. 6(a) is used to hold information that indicates whether or not a failure has occurred in a ring link.” “The ring link failure table has a bit width equal to the maximum number of ring links in the ring network, and the bit number corresponds to the ring link number. A particular bit with a value of “0” indicates that there is no failure in the corresponding ring link. A value of “1” indicates a failure in the corresponding ring link.” Ex.1005, [0036]. [image omitted] Ex.1005, Fig. 6a (annotated); Ex.1003, ¶58. Omichi further describes using a second set of bits in the form of a used ring table as shown in Fig. 6b below. “The used ring link table shown in FIG. 6(b) is provided for each virtual path and identifies the ring link that is used as a working path. The used ring link table has a bit width that corresponds to the maximum number of ring links in the ring network, and the bit number corresponds to the ring link number. A value of “0” for a bit shows that the corresponding ring link is used as a protection path. A value of	with a second set of bits representing the desired path. Omichi describes using a first set of bits in the form of a ring link failure table, as illustrated in Fig. 6a below. “The ring link failure table shown in FIG. 6(a) is used to hold information that indicates whether or not a failure has occurred in a ring link.” “The ring link failure table has a bit width equal to the maximum number of ring links in the ring network, and the bit number corresponds to the ring link number. A particular bit with a value of “0” indicates that there is no failure in the corresponding ring link. A value of “1” indicates a failure in the corresponding ring link.” Omichi, [0036]. [image omitted] Omichi, Fig. 6a (annotated). Omichi further describes using a second set of bits in the form of a used ring table as shown in Fig. 6b below. “The used ring link table shown in FIG. 6(b) is provided for each virtual path and identifies the ring link that is used as a working path. The used ring link table has a bit width that corresponds to the maximum number of ring links in the ring network, and the bit number corresponds to the ring link number. A value of “0” for a bit shows that the corresponding ring link is used as a protection path. A value of

	‘1088 Petition	Min Decl. (Ex. 1003)
	“1” shows that the corresponding ring link is used as a working path.” Ex.1005, [0037]. [image omitted] Ex.1005, Fig. 6a (annotated); Ex.1003, ¶59. Omichi then describes comparing the ring link table with the used ring link table. For a given ring link, if the bits from both tables are “1,” this means that the working path flows over a fault, and traffic should be re-routed on the opposite ring (i.e., the protection path). “If there are bits having the same bit number and whose contents are both “1” (S4, Yes), because this means that the working path includes a ring link where a failure has occurred.” Ex.1005, [0041]. Accordingly, “frame 5 or ATM-cell 6 is transmitted using the protection path (S6).” Ex.1005, [0041]. If, however, there are no ring links for which the bits in both table are a “1,” then no re-route need be taken. “If there are no bits having the same bit number and whose contents are both ‘1’ (S4, No), this means either that no failure has occurred in the ring network or that even if a failure has occurred, the working path does not include a ring link where a failure has occurred.” Ex.1005, [0040].	“1” shows that the corresponding ring link is used as a working path.” Omichi, [0037]. [image omitted] Omichi, Fig. 6A (annotated). Omichi then describes comparing the ring link table with the used ring link table. For a given ring link, if the bits from both tables are “1,” this means that the working path flows over a fault, and traffic should be re-routed on the opposite ring (i.e., the protection path). “If there are bits having the same bit number and whose contents are both “1” (S4, Yes), because this means that the working path includes a ring link where a failure has occurred.” Omichi, [0041]. Accordingly, “frame 5 or ATM-cell 6 is transmitted using the protection path (S6).” Omichi, [0041]. If, however, there are no ring links for which the bits in both table are a “1,” then no re-route need be taken. “If there are no bits having the same bit number and whose contents are both “1” (S4, No), this means either that no failure has occurred in the ring network or that even if a failure has occurred, the working path does not include a ring link where a failure has occurred.” Omichi, [0040].

	‘1088 Petition	Min Decl. (Ex. 1003)
	Thus, Omichi provides evidence that it was known to make decisions on how to route data flows by comparing a set of bits representing faults with a set of bits representing the data flow path. Ex.1003, ¶¶54-62. 1088 Petition, pp. 19-25	Thus, Omichi provides evidence that it was known to make decisions on how to route data flows by comparing a set of bits representing faults with a set of bits representing the data flow path. Ex. 1003, ¶¶ 54-62
9	First, Omichi describes a ring network with bidirectional transmission paths (“<i>a bidirectional ring network</i>”). “FIG. 1 shows a schematic view of the configuration of Embodiment 1 of a ring network according to the present invention.” Ex.1005, [0024]. Omichi’s ring network includes “a plurality of branch insertion nodes 1a through 1d that are arranged in a ring shape” and “ring links 2a through 2d that respectively connect adjacent branch insertion nodes 1a through 1d.” Ex.1005, [0024]. The ring links “are bidirectional physical transmission paths and constitute clockwise ring transmission paths and counterclockwise ring transmission paths.” Ex.1005, [0025]; Ex.1003, ¶63. [image omitted] Ex.1005, Fig. 1 (annotated); Ex.1003, ¶63. 1088 Petition, pp.25-26	First, Omichi describes a ring network with bidirectional transmission paths (“<i>a bidirectional ring network</i>”). [block quote omitted] Omichi, [0024]-[0025]. [image omitted] Omichi, Fig. 1 (annotated). Ex. 1003, ¶ 63
10	Second, Omichi’s ring network includes several branch insertion nodes 1a-1d (“<i>nodes</i>”) that are connected to each other using ring links 2a-2d (“<i>network segments</i>”).	Second, Omichi’s ring network includes several branch insertion nodes 1a-1d (“<i>nodes</i>”) that are connected to each other using ring links 2a-2d (“<i>network segments</i>”).

	‘1088 Petition	Min Decl. (Ex. 1003)
	“Branch insertion nodes 1a through 1d determine the transmission destination of the information received via connected ring links 2a through 2d.” Ex.1005, [0026]. “Ring links 2a through 2d that respectively connect adjacent branch insertion nodes 1a through 1d as shown in FIG. 1 ... These ring links 2a through 2d are used as information transmission paths between branch insertion nodes 1a through 1d.” Ex.1005, [0025]; Ex.1003, ¶64. [image omitted] Ex.1005, Fig. 1 (annotated); Ex.1003, ¶64. Accordingly, because each ring link (“<i>network segment</i>”) connects two adjacent nodes together with both a clockwise link and a counterclockwise link, the nodes are “<i>mutually connected</i>” as claimed. Ex.1003, ¶65. 1088 Petition, pp.26-27	[block quote omitted] Omichi, [0025]-[0026]. [image omitted] Omichi, Fig. 1 (annotated). Accordingly, because each ring link (“network segment”) connects two adjacent nodes together with both a clockwise link and a counterclockwise link, the nodes are “<i>mutually connected</i>” as claimed. Ex. 1003, ¶¶ 64-65
11	Third, Omichi states that “a first object of the present invention is to provide a branch insertion node that is capable of quickly recovering from failures that occur in a ring network” (Ex.1005, [0008]), which teaches “<i>a method of fault protection</i>” as claimed. Omichi seeks to “provide a branch insertion node that can quickly perform failure recovery when a failure occurs in a ring network.” Ex.1005, abstract. Omichi’s system	Third, Omichi states that “a first object of the present invention is to provide a branch insertion node that is capable of quickly recovering from failures that occur in a ring network” (Omichi, [0008]), which teaches “<i>a method of fault protection</i>” as claimed. [block quote omitted] Omichi, abstract.

	‘1088 Petition	Min Decl. (Ex. 1003)
	“causes ring link transmission part 10 to transmit information in the opposite direction to the virtual paths that are affected by the failure in a ring link, a rapid recovery from failure becomes possible.” Ex.1005, abstract; <i>see also</i> Ex.1005, [0008], [0013], [0031]-[0032]. Ex.1003, ¶66. 1088 Petition, pp.27-28	[block quote omitted] Omichi, [0008]. [block quote omitted] Omichi, [0013]. [block quote omitted] Omichi, [0031]-[0032]. Ex. 1003, ¶ 66
12	Thus, because Omichi describes circumventing failures in a ring network having a plurality of nodes interconnected through ring links, Omichi renders obvious “[i]n a <i>bidirectional ring network, in which nodes are mutually connected by network segments, a method of fault protection.</i>” Ex.1003, ¶¶63-67. 1088 Petition, p. 28	Thus, because Omichi describes circumventing failures in a ring network having a plurality of nodes interconnected through ring links, Omichi renders obvious “[i]n a <i>bidirectional ring network, in which nodes are mutually connected by network segments, a method of fault protection.</i>” Ex. 1003, ¶ 67
13	First, Omichi describes a ring link failure table (“<i>general mask</i>”) that indicates whether a failure has occurred in a ring link (“<i>indicating which of the segments are reachable in the event of a fault in the network</i>”). 1088 Petition, p. 28	First, Omichi describes a ring link failure table (“<i>general mask</i>”) that indicates whether or not failure has occurred in a ring link (“<i>indicating which of the segments are reachable in the event of a fault in the network</i>”). Ex. 1003, ¶ 68
14	Second, the ring link table assigns one bit to each ring link (“<i>by assigning a respective general mask bit to each segment</i>”). 1088 Petition, p. 29	Second, the ring link table assigns one bit to each ring link (“<i>by assigning a respective general mask bit to each segment</i>”). Ex. 1003, ¶ 69

	‘1088 Petition	Min Decl. (Ex. 1003)
15	Third, each bit indicates whether the corresponding ring link (“<i>segment</i>”) has failed (“<i>indicating whether the segment is reachable following occurrence of the fault</i>”). 1088 Petition, p. 29	Third, each bit indicates whether or not the corresponding ring link (“<i>segment</i>”) has failed (“<i>indicating whether the segment is reachable following occurrence of the fault</i>”). Ex. 1003, ¶ 70
16	Omichi’s ring link failure table is similar to the general mask as described in the ’859 patent: “The general mask in the absence of any fault in network 20 has the form 0000000.” Ex.1001, 4:54-55. “At a general mask building step 50, the node builds a general mask indicating which of the segments cannot be reached as a result of the fault. In the situation shown in FIG. 3, the general mask constructed by node F would have the form 0000100.” Ex.1001, 4:45-49; Ex.1003, ¶71. Thus, because Omichi constructs a ring link failure table in which each bit corresponds to a ring link and indicate whether there is a fault in that ring link, Omichi renders obvious “<i>constructing a general mask indicating which of the segments are reachable in the event of a fault in the network by assigning a respective general mask bit to each segment, indicating whether the segment is reachable following occurrence of the fault.</i>” Ex.1003, ¶¶68-72. 1088 Petition, p. 30	Omichi’s ring link failure table is similar to the general mask as described in the ’859 patent: “The general mask in the absence of any fault in network 20 has the form 0000000.” ’859 patent, 4:54-55. “At a general mask building step 50, the node builds a general mask indicating which of the segments cannot be reached as a result of the fault. In the situation shown in FIG. 3, the general mask constructed by node F would have the form 0000100.” ’859 patent, 4:45-49. Thus, because Omichi constructs a ring link failure table in which each bit corresponds to a ring link and indicate whether there is a fault in that ring link, Omichi renders obvious “<i>constructing a general mask indicating which of the segments are reachable in the event of a fault in the network by assigning a respective general mask bit to each segment, indicating whether the segment is reachable following occurrence of the fault.</i>” Ex. 1003, ¶¶ 71-72
17	First, Omichi describes a virtual path (“<i>a given data flow</i>”) through the ring	First, Omichi describes a virtual path (“<i>a given data flow</i>”) through

	‘1088 Petition	Min Decl. (Ex. 1003)
	network (“ <i>to be conveyed through the network from a source node to a destination node</i> ”). 1088 Petition, p. 30	the ring network (“ <i>to be conveyed through the network from a source node to a destination node</i> ”). Ex. 1003, ¶ 73
18	Second , for each virtual path (“ <i>given data flow</i> ”), Omichi’s system creates a used ring link table (“ <i>specific mask</i> ”). 1088 Petition, p. 31	Second , for each virtual path (“ <i>given data flow</i> ”), Omichi’s system creates a used ring link table (“ <i>specific mask</i> ”). Ex. 1003, ¶ 74
19	Third , Omichi’s used ring link table distinguishes a working path (“ <i>segments on a desired path</i> ”) from a protection path (e.g., a backup path). The used ring link table makes this distinction using the bits assigned to each segment. 1088 Petition, p. 32	Third , Omichi’s used ring link table distinguishes a working path (“ <i>segments on a desired path</i> ”) from a protection path (e.g., a backup path). The used ring link table makes this distinction using the bits assigned to each segment, as described below. Ex. 1003, ¶ 75
20	Accordingly, by assigning a bit to each ring link (“ <i>segment</i> ”), Omichi teaches “ <i>constructing a specific mask indicating the segments on a desired path of the flow by assigning a respective specific mask bit to each of the segments.</i> ” Ex.1003, ¶¶75-76. 1088 Petition, pp. 32-33	Accordingly, by assigning a bit to each ring link (“ <i>segment</i> ”), Omichi teaches “ <i>constructing a specific mask indicating the segments on a desired path of the flow by assigning a respective specific mask bit to each of the segments.</i> ” Ex. 1003, ¶ 76
21	Fourth , the used ring table uses a ‘1’ to indicate the working path assuming there is no fault (“ <i>indicating whether the flow was to be conveyed over the segment had occurrence of the segment been operational before the fault</i> ”). 1088 Petition, p. 33	Fourth , the used ring table uses a ‘1’ to indicate the working path assuming there is no fault (“ <i>indicating whether the flow was to be conveyed over the segment had occurrence of the segment been operational before the fault</i> ”). Ex. 1003, ¶ 77
22	Omichi’s ring link failure table is similar to the “ <i>specific mask</i> ” as it is	Omichi’s used ring link table is similar to the “ <i>specific mask</i> ” as it is described

	‘1088 Petition	Min Decl. (Ex. 1003)
	described in the ’859 patent. “For the flow shown in FIG. 1, the specific mask at node F has the form 0001111, to indicate that the flow passes through segments 31, 32, 33 and 34.” Ex.1001, 4:61-63; Ex.1003, ¶78. Thus, for each virtual path, Omichi’s system uses a ring link table in which each ring link corresponds to one bit and a ‘1’ value is used to indicate the links on the desired working path, which renders obvious “<i>for a given data flow to be conveyed through the network from a source node to a destination node, constructing a specific mask indicating the segments on a desired path of the flow by assigning a respective specific mask bit to each of the segments, indicating whether the flow was to be conveyed over the segment had occurrence of the segment been operational before the fault.</i>” Ex.1003, ¶¶73-79. 1088 Petition, p. 33	in the ’859 patent. “For the flow shown in FIG. 1, the specific mask at node F has the form 0001111, to indicate that the flow passes through segments 31, 32, 33 and 34.” ’859 patent, 4:61-63. Thus, for each virtual path, Omichi’s system uses a used ring link table in which each ring link corresponds to one bit and a ‘1’ is used to indicate the links on the desired working path, which anticipates, or in the minimum renders obvious “<i>for a given data flow to be conveyed through the network from a source node to a destination node, constructing a specific mask indicating the segments on a desired path of the flow by assigning a respective specific mask bit to each of the segments, indicating whether the flow was to be conveyed over the segment had occurrence of the segment been operational before the fault.</i>” Ex. 1003, ¶¶ 78-79
23	First, Omichi’s system compares (“<i>superimpose[es]</i>”) the bits of the ring link failure table (“<i>general mask</i>”) with the bits of the used ring link table (“<i>specific mask</i>”). 1088 Petition, p. 34	First, Omichi’s system compares (“<i>superimpose[es]</i>”) the bits of the ring link failure table (“<i>general mask</i>”) with the bits of the used ring link table (“<i>specific mask</i>”). Ex. 1003, ¶ 80
24	The graphic below shows a comparison result of Omichi’s ring link failure table of Fig. 6a (“<i>general mask</i>”) with Omichi’s used ring link table of Fig. 6b (“<i>specific mask</i>”).	The graphic below shows a comparison result of Omichi’s ring link failure table of Fig. 6a (“<i>general mask</i>”) with Omichi’s used ring link table of Fig. 6b (“<i>specific mask</i>”).

	‘1088 Petition	Min Decl. (Ex. 1003)
	Ex.1003, ¶81. [image omitted] Ex.1005, Fig. 6a, 6b (partial, annotated); Ex.1003, ¶81. 1088 Petition, pp. 34-35	[image omitted] Omichi, Fig. 6a, 6b (partial, annotated). Ex. 1003, ¶ 81
25	By comparing bits to see if they are both a ‘1’, Omichi’s system is performing an AND operation. 1088 Petition, p. 35	By comparing bits to see if they are both a ‘1’, Omichi’s system is performing an AND operation. Ex. 1003, ¶ 82
26	Omichi’s comparing of both the ring link failure table and the used ring link table is within the scope of “<i>superimposing</i>” as recited in claim 1. Indeed, claim 2 (described in more detail below) recites that “<i>superimposing</i>” comprises “<i>combining the masks by means of a Boolean operation.</i>” Ex.1003, ¶82. 1088 Petition, pp. 35-36	Omichi’s comparing of both the ring link failure table and the used ring link table is within the scope of “<i>superimposing</i>” as recited in claim 1. Indeed, claim 2 (described in more detail below) recites that “<i>superimposing</i>” comprises “<i>combining the masks by means of a Boolean operation.</i>” Ex. 1003, ¶ 82
27	Second, the two tables are compared to determine whether to reroute data (“<i>in order to determine a disposition of the flow</i>”). 1088 Petition, p. 36	Second, the two tables are compared to determine whether to reroute data (“<i>in order to determine a disposition of the flow</i>”). Ex. 1003, ¶ 83
28	The example described above is for the case where the working path is in the clockwise direction, and the protection path is in the counter-clockwise direction, as indicated by the route switching flag. “A route switching flag of “0” shows that the working path is clockwise.” Ex.1005, [0038]. The overall process of	The example described above is for the case where the working path is in the clockwise direction, and the protection path is in the counter-clockwise direction, as indicated by the route switching flag. “A route switching flag of “0” shows that the working path is clockwise.” Omichi, [0038]. The overall process of

	‘1088 Petition	Min Decl. (Ex. 1003)
	selecting either a clockwise or counter-clockwise direction for a transmission is illustrated in Omichi’s Figure 7, below. Ex.1003, ¶85. [image omitted] Ex.1005, Fig. 7 (annotated with translation); Ex.1003, ¶85. S1. Receive frame or ATM cell from branch line link reception part S2. Specify virtual path number S3. Route switch flag S4. Bit with value of “1” exists S5. Transmit in clockwise direction S6. Transmit in counterclockwise direction (circumvent the failure) S7. Bit with value of “1” exists S8. Transmit in counterclockwise direction S9. Transmit in clockwise direction (circumvent the failure) Ex.1005, Fig. 7 translation. Omichi also illustrates the case where the working path is in the counter-clockwise direction and the protection path is in the clockwise direction: “A value of ‘1’ shows that the working path is counterclockwise.” Ex.1005,	selecting either a clockwise or counter-clockwise direction for a transmission is illustrated in Omichi’s Figure 7, below. [image omitted] Omichi, Fig. 7 (annotated with translation). S1. Receive frame or ATM cell from branch line link reception part S2. Specify virtual path number S3. Route switch flag S4. Bit with value of “1” exists S5. Transmit in clockwise direction S6. Transmit in counterclockwise direction (circumvent the failure) S7. Bit with value of “1” exists S8. Transmit in counterclockwise direction S9. Transmit in clockwise direction (circumvent the failure) Omichi, Fig. 7 translation. Omichi also illustrates the case where the working path is in the counter-clockwise direction and the protection path is in the clockwise direction: “A value of ‘1’ shows that the working path is counterclockwise.” Omichi,

	‘1088 Petition	Min Decl. (Ex. 1003)
	[0038]. In this case, if the working path includes a fault, traffic is rerouted from the (counterclockwise) working path to the (clockwise) protection path. [block quote omitted] Ex.1005, [0043]; Ex.1003, ¶86. 1088 Petition, pp. 36-38	[0038]. In this case, if the working path includes a fault, traffic is rerouted from the (counterclockwise) working path to the (clockwise) protection path. [block quote omitted] Omichi, [0043]. Ex. 1003, ¶¶ 85-86
29	By selecting a transmission direction, Omichi’s process “<i>determine[s] a disposition of the flow.</i>” Thus, because Omichi compares the bits in the ring link failure table with the bits in the used ring link table to determine whether to reroute data, Omichi renders obvious “<i>superimposing the general and specific masks in order to determine a disposition of the flow.</i>” Ex.1003, ¶¶80-88. 1088 Petition, p. 39	By selecting a transmission direction, Omichi’s process “<i>determine[s] a disposition of the flow.</i>” Thus, because Omichi compares the bits in the ring link failure table with the bits in the used ring link table to determine whether to reroute data, Omichi renders obvious “<i>superimposing the general and specific masks in order to determine a disposition of the flow.</i>” Ex. 1003, ¶ 88
30	Second, a POSITA would have understood that comparing bits in the manner described by Omichi is effectively performing a Boolean AND operation. A Boolean AND operations compares two bits to determine if both bits are ‘1’: “AND (mathematics of computing) A Boolean operator having the property that if P is a statement, Q is a statement, R is a statement, ... , then the AND of P,Q,R, ... is true if and only if all statements are true.” Ex.1006, 37. 1088 Petition, p. 40	Second, a POSITA would have understood that comparing bits in the manner described by Omichi is effectively performing a Boolean AND operation. A Boolean AND operations compares two bits to determine if both bits are ‘1’: “AND (mathematics of computing) A Boolean operator having the property that if P is a statement, Q is a statement, R is a statement, ... , then the AND of P,Q,R, ... is true if and only if all statements are true.” IEEE Dictionary, 37. Ex. 1003, ¶ 91

	‘1088 Petition	Min Decl. (Ex. 1003)
31	Omichi’s comparing of both the ring link failure table (Fig. 6a) and the used ring link table (Fig. 6b) (“<i>superimposing</i>”) is thus “<i>combining the masks by means of a Boolean operation.</i>” Ex.1003, ¶¶91-92. Thus, Omichi describes what is known as a Boolean AND operations by comparing the two tables to see where there is a ‘1’ in both corresponding bit numbers, which renders obvious “<i>wherein superimposing the masks comprises combining the masks by means of a Boolean operation.</i>” Ex.1003, ¶¶89-93. 1088 Petition, pp. 40-41	Omichi’s comparing of both the ring link failure table (Fig. 6a) and the used ring link table (Fig. 6b) (“<i>superimposing</i>”) is thus “<i>combining the masks by means of a Boolean operation.</i>” Thus, Omichi describes what is known as a Boolean AND operations by comparing the two tables to see where there is a ‘1’ in both corresponding bit numbers, which renders obvious “<i>wherein superimposing the masks comprises combining the masks by means of a Boolean operation.</i>” Ex. 1003, ¶¶ 92-93
32	First, for the reasons explained above at [1.3], Omichi describes the situation in which the system decides to maintain the data flow over the working path (“<i>desired path</i>”). If the result of the comparison (i.e., Boolean AND operation) between the ring link failure table (“<i>general mask</i>”) and the used ring link table (“<i>specific mask</i>”) is all zeros, then there are no failures along the working path. [block quote omitted] Ex.1005, [0040]; Ex.1003, ¶94 Accordingly, traffic is maintained along the clockwise working path. Omichi also describes the same example in the case where the working path is the counterclockwise path.	First, for the reasons explained above at [1.3], Omichi describes the situation in which the system decides to maintain the data flow over the working path (“<i>desired path</i>”). If the result of the comparison (i.e., Boolean AND operation) between the ring link failure table (“<i>general mask</i>”) and the used ring link table (“<i>specific mask</i>”) is all zeros, then there are no failures along the working path. [block quote omitted] Omichi, [0040]. Accordingly, traffic is maintained along the clockwise working path. Omichi also describes the same example in the case where the working path is the counterclockwise path.

	‘1088 Petition	Min Decl. (Ex. 1003)
	1088 Petition, pp. 41-42	Ex. 1003, ¶¶ 94-95
33	Second, for the reasons explained above at [1.3], Omichi describes the situation where the system decides to switch from the working path to the protection path (“<i>to steer the data flow over an alternative path</i>”). For a given ring link, if the bits from both tables are “1,” this means that the working path flows over a fault, and traffic should be re-routed on the opposite ring (i.e., the protection path). [block quote omitted] Ex.1005, [0041]; Ex.1003, ¶96. Accordingly, traffic is rerouted to the protection path. Omichi also describes the same example in the case where the working path is the counterclockwise path. Ex.1003, ¶97. Omichi also illustrates the case where the working path is in the counter-clockwise direction and the protection path is in the clockwise direction: “A value of ‘1’ shows that the working path is counterclockwise.” Ex.1005, [0038]. In this case, if the working path includes a fault, traffic is rerouted from the (counterclockwise) working path to the (clockwise) protection path. 1088 Petition, pp. 43-44	Second, for the reasons explained above at [1.3], Omichi describes the situation where the system decides to switch from the working path to the protection path (“<i>to steer the data flow over an alternative path</i>”). For a given ring link, if the bits from both tables are “1,” this means that the working path flows over a fault, and traffic should be re-routed on the opposite ring (i.e., the protection path). [block quote omitted] Omichi, [0041]. Accordingly, traffic is maintained along the clockwise working path. Omichi also describes the same example in the case where the working path is the counterclockwise path. Omichi also illustrates the case where the working path is in the counter-clockwise direction and the protection path is in the clockwise direction: “A value of ‘1’ shows that the working path is counterclockwise.” Omichi, [0038]. In this case, if the working path includes a fault, traffic is rerouted from the (counterclockwise) working path to the (clockwise) protection path. Ex. 1003, ¶¶ 96-98
34	Third , it would have been obvious that if both rings have a fault, there	Third , it would have been obvious that if both rings have a fault,

	‘1088 Petition	Min Decl. (Ex. 1003)
	would be no reason to transmit data along either path. Ex.1003, ¶99. 1088 Petition, p. 45	there would be no reason to transmit data along either path. Ex. 1003, ¶
35	Accordingly, Omichi teaches two of the three alternative recitations of this claim, and a POSITA would have found the third alternative recitation obvious in view of Omichi’s teachings. Ex.1003, ¶101. Thus, Omichi’s system compares the ring link failure table with the used ring link table to decide whether to stay with the working path or switch to the protection path, which renders obvious “ <i>wherein superimposing the masks comprises determining whether to convey the data flow over the desired path, to steer the data flow over an alternative path, or to stop conveying the data flow</i> ” as claimed. Ex.1003, ¶¶94-102. 1088 Petition, p. 46	Accordingly, Omichi explicitly teaches two of the three alternative recitations of this claim, and a POSITA would have found the third alternative recitation obvious based on POSITA’s knowledge of the relation between the working path and the protection path. Thus, Omichi’s system compares the ring link failure table with the used ring link table to decide whether to stay with the working path or switch to the protection path, which renders obvious “ <i>wherein superimposing the masks comprises determining whether to convey the data flow over the desired path, to steer the data flow over an alternative path, or to stop conveying the data flow</i> ” as claimed. Ex. 1003, ¶¶ 101-102
36	First , as described above at [1.3], Omichi describes comparing the ring link failure table with the used ring link table through a Boolean AND operation. The result of this comparison operation teaches a “ <i>combined mask</i> ” as claimed. Ex.1003, ¶103. Both the ring link failure table of Fig. 6a and the used ring link table of Fig. 6b are represented using bits. <i>See</i> Ex.1005, [0036]-[0037]. Accordingly,	First , as described above at [1.3], Omichi describes comparing the ring link failure table with the used ring link table through a Boolean AND operation. The result of this comparison operation teaches a “ <i>combined mask</i> ” as claimed. Both the ring link failure table of Fig. 6a and the used ring link table of Fig. 6b are represented using bits. <i>See</i> Omichi, [0036]-[0037]. Accordingly, it would have been obvious that the

	‘1088 Petition	Min Decl. (Ex. 1003)
	it would have been obvious that the comparison operations described by Omichi similarly results in a set of bits. The resulting set of bits is thus achieved by combining (through an AND operation) the ring link failure table and the used ring link table. The resulting set of bits is thus a “<i>combined mask</i>” as claimed. Ex.1003, ¶104. Second, for the reasons described at [3.1], Omichi teaches “<i>determining that the data flow should be conveyed over the desired path.</i>” Ex.1003, ¶105. Third, Omichi’s system decides to stay with the working path when the result of the comparison is that no bits are “1” (“<i>when the combined mask is null</i>”). 1088 Petition, pp. 46-47	comparison operations described by Omichi similarly results in a set of bits. The resulting set of bits is thus achieved by combining (through an AND operation) the ring link failure table and the used ring link table. The resulting set of bits is thus a “<i>combined mask</i>” as claimed. Second, for the reasons described at [3.1], Omichi teaches “<i>determining that the data flow should be conveyed over the desired path.</i>” Third, Omichi’s system decides to stay with the working path when the result of the comparison is that no bits are “1” (“<i>when the combined mask is null</i>”). Ex. 1003, ¶¶ 103-106
37	A POSITA would have understood that the term “null” refers to a set of ‘0’s. Ex.1006, 748. Accordingly, when “there are no bits having the same bit number and whose contents are both ‘1,’” the combined result of the Boolean AND operation is a set of ‘0’s (“<i>the combined mask is null</i>”). Ex.1005, [0040]; Ex.1003, ¶110. Thus, because Omichi’s system determines to stay with the working path when the comparison result between the ring link failure table and used ring link table has no bits with both a 1, thus resulting in only zeros,	A POSITA would have understood that the term “null” refers to a set of ‘0’s. IEEE Dictionary, 748. Accordingly, when “there are no bits having the same bit number and whose contents are both ‘1,’” the combined result of the Boolean AND operation is a set of ‘0’s (“<i>the combined mask is null</i>”). Omichi, [0040]. Thus, because Omichi’s system determines to stay with the working path when the comparison result between the ring link failure table and used ring link table has no bits with both a 1, thus resulting in only zeros,

	‘1088 Petition	Min Decl. (Ex. 1003)
	Omichi renders obvious “<i>wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should be conveyed over the desired path when the combined mask is null.</i>” Ex.1003, ¶103-11. 1088 Petition, pp. 49-50	Omichi renders obvious “<i>wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should be conveyed over the desired path when the combined mask is null.</i>” Ex. 1003, ¶¶ 110-111
38	First, as described above at [1.3], Omichi describes comparing the ring link failure table with the used ring link table through a Boolean AND operation. The result of this comparison operation teaches a “<i>combined mask</i>” as claimed. Ex.1003, ¶112. Second, for the reasons described at [3.1], Omichi teaches “<i>determining that the data flow should be steered over the alternative path.</i>” Ex.1003, ¶113. Third, Omichi’s system decides to switch from the working path to the protection path when there are bits having the same bit number and whose contents are both ‘1.’ 1088 Petition, p. 50	First, as described above at [1.3], Omichi describes comparing the ring link failure table with the used ring link table through a Boolean AND operation. The result of this comparison operation teaches a “<i>combined mask</i>” as claimed. Second, for the reasons described at [3.1], Omichi teaches “<i>determining that the data flow should be steered over the alternative path.</i>” Third, Omichi’s system decides to switch from the working path to the protection path when there are bits having the same bit number and whose contents are both ‘1.’ Ex. 1003, ¶¶ 112-114
39	The combined figure below illustrates the case where “there are bits having the same bit number and whose contents are both ‘1.’” Ex.1005, [0041], [0043]. [image omitted]	The combined figure below illustrates the case where “there are bits having the same bit number and whose contents are both ‘1.’” Omichi, [0041], [0043]. [image omitted]

	‘1088 Petition	Min Decl. (Ex. 1003)
	Ex.1005, Figs. 6a, 6b (partial, annotated); Ex.1003, ¶115. As can be seen, the comparison result (“<i>combined mask</i>”) is identical to the ring link failure table (“<i>general mask</i>”). Accordingly, “<i>the combined mask corresponds to the general mask</i>” as claimed. Ex.1003, ¶116. Thus, Omichi’s system determines to switch to the protection path when the comparison result between the ring link failure table and used ring link table matches the ring link failure table, which renders obvious “<i>wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should be steered over the alternative path when the combined mask corresponds to the general mask.</i>” Ex.1003, ¶112-17. 1088 Petition, pp. 51-52	Omichi, Figs. 6a, 6b (partial, annotated). As can be seen, the comparison result (“<i>combined mask</i>”) is identical to the ring link failure table (“<i>general mask</i>”). Accordingly, “<i>the combined mask corresponds to the general mask</i>” as claimed. Thus, Omichi’s system determines to switch to the protection path when the comparison result between the ring link failure table and used ring link table matches the ring link failure table, which renders obvious “<i>wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should be steered over the alternative path when the combined mask corresponds to the general mask.</i>” Ex. 1003, ¶¶ 115-117
40	First, as described above at [1.3], Omichi describes comparing the ring link failure table with the used ring link table through a Boolean AND operation. The result of this comparison operation teaches a “<i>combined mask</i>” as claimed. Ex.1003, ¶118. Second, for the reasons described at [3.1], it would have been obvious that where both the working path and the protection path fail, “<i>the data flow should not be conveyed.</i>”	First, as described above at [1.3], Omichi describes comparing the ring link failure table with the used ring link table through a Boolean AND operation. The result of this comparison operation teaches a “<i>combined mask</i>” as claimed. Second, for the reasons described at [3.1], it would have been obvious that where both the working path and the protection path fail, “<i>the data flow should not be conveyed.</i>”

'1088 Petition	Min Decl. (Ex. 1003)
Ex.1003, ¶119. Third, Omichi contemplates that either the clockwise path or the counterclockwise path may fail. <i>See</i> Ex.1005, [0041] (the clockwise path is the working path and “the working path includes a ring link where a failure has occurred.”), [0043] (the counterclockwise path is the working path and “the working path includes a ring link where a failure has occurred.”). Because either path may fail, it may be the case that both paths fail at the same time. Ex.1003, ¶120. Dr. Min provides a modified figure (shown below) to illustrate the case where there are at least two ring link failures (one on the working path and one on the protection path). Ex.1005, [0041], [0043]; Ex.1003, ¶121. [image omitted] Ex.1005, Figs. 6a, 6b (partial, annotated); Ex.1003, ¶121. As can be seen, the comparison result (“<i>combined mask</i>”) includes a ‘1’ (is not null) and is different than (does not correspond to) the ring link failure table (“<i>general mask</i>”). Accordingly, “<i>the combined mask is neither null, nor does it correspond to the general mask</i>” as claimed. Ex.1003, ¶122. Thus, in Omichi’s system when there is a fault in both the working path and	Third, Omichi contemplates that either the clockwise path or the counterclockwise path may fail. <i>See</i> Omichi, [0041] (the clockwise path is the working path and “the working path includes a ring link where a failure has occurred.”), [0043] (the counterclockwise path is the working path and “the working path includes a ring link where a failure has occurred.”). Because either path may fail, it may be the case that both paths fail at the same time. I have modified the figure below to show the case where there are at least two ring link failures (one on the working path and one on the protection path). Omichi, [0041], [0043]. [image omitted] Omichi, Figs. 6a, 6b (partial, annotated). As can be seen, the comparison result (“<i>combined mask</i>”) includes a ‘1’ (is not null) and is different than (does not correspond to) the ring link failure table (“<i>general mask</i>”). Accordingly, “<i>the combined mask is neither null, nor does it correspond to the general mask</i>” as claimed. Thus, in Omichi’s system when there is a fault in both the working path and

	‘1088 Petition	Min Decl. (Ex. 1003)
	the protection path, and there is thus no reason to transmit data, this will be indicated by a non-null comparison result that is different than the used ring link failure table, which renders obvious “<i>wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should not be conveyed when the combined mask is neither null, nor does it correspond to the general mask.</i>” Ex.1003, ¶123. 1088 Petition, pp. 52-54	the protection path, and there is thus no reason to transmit data, this will be indicated by a non-null comparison result that is different than the used ring link failure table, which renders obvious “<i>wherein superimposing the masks comprises generating a combined mask, and determining that the data flow should not be conveyed when the combined mask is neither null, nor does it correspond to the general mask.</i>” Ex. 1003, ¶¶ 118-123
41	First, for the reasons described above at [1.0], Omichi teaches a bidirectional ring network having a plurality of branch insertion nodes (“<i>a bidirectional ring network, in which nodes are mutually connected by network segments.</i>”). Ex.1003, ¶124. Second, each of Omichi’s branch insertion nodes is a “<i>communication device for use in</i>” the bidirectional network because each node communicates with the other nodes as described above at [1.0]. Ex.1003, ¶125. 1088 Petition, p. 54	First, for the reasons described above at [1.0], Omichi teaches a bidirectional ring network having a plurality of branch insertion nodes (“<i>a bidirectional ring network, in which nodes are mutually connected by network segments.</i>”) Second, each of Omichi’s branch insertion nodes is a “<i>communication device for use in</i>” the bidirectional network because each node communicates with the other nodes as described above at [1.0]. Ex. 1003, ¶¶ 124-125
42	First, Omichi’s branch insertion nodes (“<i>device[s]</i>”) include a processing means (“<i>network processor</i>”). 1088 Petition, pp. 54-55	First, Omichi’s branch insertion nodes (“<i>device[s]</i>”) include a processing means (“<i>network processor</i>”). Ex. 1003, ¶ 126
43	A POSITA would have recognized Omichi’s processing means to be a network processor, as network	A POSITA would have recognized Omichi’s processing means to be a network processor, as network

	‘1088 Petition	Min Decl. (Ex. 1003)
	processors were commonly used in the branch nodes described my Omichi. <i>See e.g.</i>, Ex.1007, 6:42-43 (“Branch nodes 231-235 may each be associated with a host (such as a network processor).”). Ex.1003, ¶127. The processing means performs the steps in Fig. 7: “FIG. 7 is a flowchart showing the processing sequence of a branch insertion node according to the present embodiment.” Ex.1005, [0039]; Ex.1003, ¶128. Thus, Omichi’s branch insertion nodes include a processing means to perform the processes described within its disclosure, which renders obvious “<i>the device comprising a network processor.</i>” Ex.1003, ¶129. 1088 Petition, p. 55	processor’s were commonly used in the branch nodes described my Omichi. <i>See e.g.</i>, Kao, 6:42-43 (“Branch nodes 231-235 may each be associated with a host (such as a network processor)”). The processing means performs the steps in Fig. 7: “FIG. 7 is a flowchart showing the processing sequence of a branch insertion node according to the present embodiment.” Omichi, [0039]. Thus, Omichi’s branch insertion nodes include a processing means to perform the processes described within its disclosure, which renders obvious “<i>the device comprising a network processor.</i>” Ex. 1003, ¶¶ 127-129
44	First, as explained above at [7.1], Omichi describes “a processing means that uses the information regarding the location of the ring link where a failure has occurred that is held in the first table.” Ex.1005, [0014]. As described above, at [1.1], Omichi’s ring link failure table teaches a “<i>general mask</i>” as claimed. Ex.1003, ¶130. Second, for the reasons explained above at [1.1], Omichi renders obvious “<i>which is adapted to construct a general mask indicating which of the segments are reachable in the event of a fault in the network, the general</i>	First, as explained above at [7.1], Omichi describes “a processing means that uses the information regarding the location of the ring link where a failure has occurred that is held in the first table.” Omichi, [0014]. As described above, at [1.1], Omichi’s ring link failure table teaches a “<i>general mask</i>” as claimed. Second, for the reasons explained above at [1.1], Omichi renders obvious “<i>which is adapted to construct a general mask indicating which of the segments are reachable in the event of a fault in the network, the general mask comprising a respective general</i>

	‘1088 Petition	Min Decl. (Ex. 1003)
	<i>mask comprising a respective general mask bit for each segment, indicating whether the segment is reachable following occurrence of the fault.”</i> Ex.1003, ¶131. 1088 Petition, p. 56	<i>mask bit for each segment, indicating whether the segment is reachable following occurrence of the fault.”</i> Ex. 1003, ¶¶ 130-131
45	First, as explained above at [7.1], Omichi describes “a processing means that uses ... the information regarding the ring link to be used as a working path that is set in the second table.” Ex.1005, [0014]. As described above, at [1.2], Omichi’s used ring link table teaches a “<i>specific mask</i>” as claimed. Ex.1003, ¶132. For the reasons explained above at [1.2], Omichi renders obvious “<i>to construct a specific mask for a given data flow to be conveyed through the network from a source node to a destination node, the specific mask indicating the segments on a desired path of the flow by comprising a respective specific mask bit for each segment, indicating whether the flow was to be conveyed over the segment had occurrence of the segment been operational before the fault.</i>” Ex.1003, ¶133. 1088 Petition, pp. 56-57	First, as explained above at [7.1], Omichi describes “a processing means that uses ... the information regarding the ring link to be used as a working path that is set in the second table.” Omichi, [0014]. As described above, at [1.2], Omichi’s used ring link table teaches a “<i>specific mask</i>” as claimed. For the reasons explained above at [1.2], Omichi renders obvious “<i>to construct a specific mask for a given data flow to be conveyed through the network from a source node to a destination node, the specific mask indicating the segments on a desired path of the flow by comprising a respective specific mask bit for each segment, indicating whether the flow was to be conveyed over the segment had occurrence of the segment been operational before the fault.</i>” Ex. 1003, ¶¶ 132-133
46	First, as described above at [7.1], Omichi describes a series of steps performed by a processing means (“<i>network processor</i>”) as illustrated in Fig. 7. “FIG. 7 is a flowchart showing the processing sequence of a branch	First, as described above at [7.1], Omichi describes a series of steps performed by a processing means (“<i>network processor</i>”) as illustrated in Fig. 7. “FIG. 7 is a flowchart showing the processing sequence of a branch

	‘1088 Petition	Min Decl. (Ex. 1003)
	insertion node according to the present embodiment.” Ex.1005, [0039]; Ex.1003, ¶134. For the reasons explained above at [1.3], the steps described in connection with Omichi’s Fig. 7 render obvious <i>“to superimpose the general and specific masks in order to determine a disposition of the flow.”</i> Ex.1003, ¶135. 1088 Petition, p. 57	insertion node according to the present embodiment.” Omichi, [0039]. For the reasons explained above at [1.3], the steps described in connection with Omichi’s Fig. 7 render obvious <i>“to superimpose the general and specific masks in order to determine a disposition of the flow.”</i> Ex. 1003, ¶¶ 134-135