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EXAMINER	
ZAIDI, IQBAL	

ART UNIT	PAPER NUMBER
2464	

NOTIFICATION DATE	DELIVERY MODE
02/21/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 16/238,938	Applicant(s) XU et al.	
	Examiner IQBAL ZAIDI	Art Unit 2464	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 11/08/2019.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☑ All b)☐ Some** c)☐ None of the:

1.☑ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

1. The instant application having application No 16/238938 filed on 11/08/2019 is presented for examination by the examiner.

Examiner Notice

2. **Claim 1** would be allowable if (i) claim 2 or 4 is incorporated into the independent claim 1, (ii) if obviousness-Variant type double patenting and 101 rejection resolved.

3. **Claim 9** would be allowable if (i) claim 10 or 12 is incorporated into the independent claim 9, (ii) if obviousness-Variant type double patenting and 101 rejection resolved.

4. **Claim 17** would be allowable if (i) claim 18 or 20 is incorporated into the independent claim 9, (ii) if obviousness-Variant type double patenting and 101 rejection resolved.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In claims 17-20, applicant has claimed "computer program product". When applying the broadest reasonable interpretation of the claims they covers a software operation system *per*.

Therefore, **claims 17-20** are directed to non-statutory subject matter as computer program, per se.

Double Patenting

6. **Claims 1-20** are rejected under the judicially created doctrine of **obviousness-Variant type double patenting** as being unpatentable over **claims 2-9, 11-18, and 20-21 of U.S. Patent # 15360234**. Although the conflicting claims are not identical, they are not patentably distinct from each other. **Claims 2-9, 11-18, and 20-21 of US Patent # 10181989** each contains every element of Claims 2-34 respectively of the instant application and thus anticipates the claims of the instant application. Claim(s) of the instant application therefore is/are not patently distinct from the earlier patent claim(s) and as such is/are unpatentable over obvious-type double patenting. A later patent/application claim is not patentably distinct from an earlier claim if the later claim is anticipated by the earlier claim.

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim **is obvious over, or anticipated by**, the earlier claim. *In re Longi, 759 F.2d at 896, 225 USPQ at 651* (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); *In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998)* (affirming a holding of

obviousness type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus)". *ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).*

"Claims 1-20 are generic to the species of invention covered by claims 2-9, 11-18, and 20-21 of the patent. Thus, the generic invention is "anticipated" by the species of the patented invention. *Cf., Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (holding that an earlier species disclosure in the prior art defeats any generic claim).* This court's predecessor has held that, without a terminal disclaimer, the species claims preclude issuance of the generic application. *In re Van Ornum, 686 F.2d 937, 944, 214 USPQ 761, 767 (CCPA 1982).* Accordingly, absent a terminal disclaimer, claims 1-20 were properly rejected under the doctrine of obviousness-type double patenting". *In re Goodman (CA FC) 29 USPQ2d 2010 (12/3/1993).*

For claim 1, Patent Application discloses a service chain fault detection method, wherein the method comprises determining, by a service forwarding entity (SFE), to communicate with a first service function (SF) node on a service chain after obtaining a first fault tracing detection request packet, wherein the first fault tracing detection request packet comprises a path identifier (ID), and the path ID is used to identify a path of the service chain; obtaining, by the SFE, an ID of the first SF node; and sending, by the SFE, a first fault tracing detection response packet to the device for initiating fault

detection, wherein the first fault tracing detection response packet comprises the path ID and the ID of the first SF node *(see claim 2)*.

For claim 2, Patent Application discloses the determining, by an SFE, to communicate with a first SF node on the service chain comprises determining, by the SFE based on the path ID, to forward the first fault tracing detection request packet by using a first forwarding entry, wherein the first forwarding entry comprises the path ID and an address of the first SF node; sending, by the SFE, the first fault tracing detection request packet to the first SF node based on the address of the first SF node; and receiving, by the SFE, a second fault tracing detection request packet from the first SF node, wherein the second fault tracing detection request packet comprises the path ID *(see claim 2)*.

For claim 3, Patent Application discloses the first fault tracing detection request packet further comprises a first parameter, the first parameter is used to identify the first SF node or is used to identify a previous-hop SF node of the first SF node on the service chain, and the first forwarding entry further comprises the first parameter; and the determining, by the SFE based on the path ID, to forward the first fault tracing detection request packet by using a first forwarding entry comprises: determining, by the SFE based on the first parameter and the path ID, to forward the first fault tracing detection request packet by using the first forwarding entry *(see claim 3)*.

For claim 4, Patent Application discloses before the sending, by the SFE, a first fault tracing detection response packet to the device for initiating fault detection, the method further comprises sending, by the SFE, a second fault tracing detection response packet to the device for initiating fault detection, wherein the second fault tracing detection response packet comprises the path ID and an ID of the SFE *(see claim 2)*.

For claim 5, Patent Application discloses the first fault tracing detection request packet further comprises a node list, and the node list comprises an ID of the previous-hop SF node of the first SF node on the service chain; and before the sending, by the SFE, a first fault tracing detection response packet to the device for initiating fault detection, the method further comprises obtaining, by the SFE, an updated node list, wherein the updated node list is a list generated after the ID of the first SF node is added to the node list, and an order of all SF nodes comprised in the updated node list is the same as an order of all the SF nodes on the service chain; and adding, by the SFE, the updated node list to the first fault tracing detection response packet*(see claim 2)*.

For claim 6, Patent Application discloses the method further comprises adding, by the SFE, at least one of the first parameter or the ID of the SFE to the first fault tracing detection response packet*(see claim 2)*.

For claim 7, Patent Application discloses the first fault tracing detection request packet further comprises an ID of an SF node used as an end point; and after the sending, by the SFE, a first fault tracing detection response packet to the device for initiating fault detection, the method further comprises ending, by the SFE, detection on the service chain when the ID of the first SF node is the same as the ID of the SF node used as the end point *(see claim 2)*.

For claim 8, Patent Application discloses the method further comprises receiving, by the SFE, the first fault tracing detection request packet sent by the device for initiating fault detection to obtain the first fault tracing detection request packet; or receiving, by the SFE, the first fault tracing detection request packet sent by a previous-hop SFE of the SFE on the service chain to obtain the first fault tracing detection request packet; or generating,

by the SFE, the first fault tracing detection request packet to obtain the first fault tracing detection request packet*(see claim 5)*.

For claim 9, Patent Application discloses a service forwarding apparatus, wherein the service forwarding apparatus comprising a memory storing instructions; and a processor coupled to the memory to execute the instructions to determine to communicate with a first service function (SF) node on a service chain after obtaining a first fault tracing detection request packet, wherein the first fault tracing detection request packet comprises a path identifier (ID), and the path ID is used to identify a path of the service chain; obtain an ID of the first SF node; and send a first fault tracing detection response packet to the device for initiating fault detection, wherein the first fault tracing detection response packet comprises the path ID an the ID of the first SF node*(see claim 11)*.

For claim 10, Patent Application discloses the processor is instructed to determine, based on the path ID, to forward the first fault tracing detection request packet by using a first forwarding entry, wherein the first forwarding entry comprises the path ID and an address of the first SF node; send the first fault tracing detection request packet to the first SF node based on the address of the first SF node; and receive a second fault tracing detection request packet from the first SF node, wherein the second fault tracing detection request packet comprises the path ID*(see claim 11)*.

For claim 11, Patent Application discloses the first fault tracing detection request packet further comprises a first parameter, the first parameter is used to identify the first SF node or is used to identify a previous-hop SF node of the first SF node on the service chain, and the first forwarding entry further comprises the first parameter; and wherein the processor is further instructed to determine, based on the first parameter and the path ID,

to forward the first fault tracing detection request packet by using the first forwarding entry*(see claim 12)*.

For claim 12, Patent Application discloses the processor is further instructed to send a second fault tracing detection response packet to the device for initiating fault detection, wherein the second fault tracing detection response packet comprises the path ID and an ID of the service forwarding apparatus *(see claim 11)*.

For claim 13, Patent Application discloses the first fault tracing detection request packet further comprises a node list, and the node list comprises an ID of the previous-hop SF node of the first SF node on the service chain; wherein the processor is further instructed to obtain an updated node list, wherein the updated node list is a list generated after the ID of the first SF node is added to the node list, and an order of all SF nodes comprised in the updated node list is the same as an order of all the SF nodes on the service chain; and add the updated node list to the first fault tracing detection response packet*(see claim 11)*.

For claim 14, Patent Application discloses the processor is further instructed to add at least one of the first parameter or the ID of the SFE to the first fault tracing detection response packet *(see claim 2)*.

For claim 15, Patent Application discloses the first fault tracing detection request packet further comprises an ID of an SF node used as an end point; and wherein the processor is further instructed to end detection on the service chain when the ID of the first SF node is the same as the ID of the SF node used as the end point *(see claim 11)*.

For claim 16, Patent Application discloses the method further comprises receive the first fault tracing detection request packet sent by the device for initiating fault detection to obtain the first fault tracing detection request packet; or receive the first fault tracing detection request packet sent by a previous-hop SFE of the SFE on the service chain to obtain the first fault tracing detection request packet; or generate the first fault tracing detection request packet to obtain the first fault tracing detection request packet *(see claim 18)*.

For claim 17, Patent Application discloses a computer program product comprising computer-executable instructions for storage on a non-transitory computer-readable medium that, when executed by a processor, cause a service forwarding apparatus to obtain a first fault tracing detection request packet on a service chain, wherein the first fault tracing detection request packet comprises a path identifier (ID), and wherein the path ID identifies a path of the service chain; determine to communicate with a first service function (SF) node on the service chain; obtain an ID of the first SF node; and send a first fault tracing detection response packet to a device for initiating fault detection, wherein the first fault tracing detection response packet comprises the path ID and the ID of the first SF node*(see claim 2).*

For claim 18, Patent Application discloses the instructions further cause the service forwarding apparatus to determine, based on the path ID, to forward the first fault tracing detection request packet using a first forwarding entry, wherein the first forwarding entry comprises the path ID and an address of the first SF node; send the first fault tracing detection request packet to the first SF node based on the address of the first SF node;

and receive a second fault tracing detection request packet from the first SF node, wherein the second fault tracing detection request packet comprises the path ID *(see claims 2 and 3)*.

For claim 19, Patent Application discloses the first fault tracing detection request packet further comprises a first parameter, wherein the first parameter identifies the first SF node or identifies a previous-hop SF node of the first SF node on the service chain, wherein first forwarding entry further comprises the first parameter, and wherein the instructions further cause the service forwarding apparatus to further determine, based on the first parameter and the path ID, to forward the first fault tracing detection request packet*(see claims 2 and 3)*.

For claim 20, Patent Application discloses before sending the first fault tracing detection response packet, the instructions further cause the service forwarding apparatus to send a second fault tracing detection response packet to the device for initiating fault detection, and wherein the second fault tracing detection response packet comprises the path ID and an ID of the service forwarding apparatus *(see claim 3)*.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, 8-9, and 16-20** are rejected under 35 U.S.C. 103 as being unpatentable over Rajagopal et al. (US 20150227404, Aug. 13, 2015) in view of JOKELA et al. (US 20160254998, Sep. 1, 2016).

Regarding **Claim 1**, Rajagopal discloses the service chain fault detection method comprising obtaining a first fault tracing detection packet on a service chain *(page 5, par (0052), line 1-10, When SDS receives a central fault report perform service fault segregation to identify fault nodes where a fault have occurred, and rules to be executed by RE to identify remediation measures. SDS use service chain information and other received service faults to identify the nodes, SDS be able to identify dependencies between central fault records submitted by different SAs, a fault in one node because several SAs linked to nodes with which the faulty node communicates to generate and send central fault records. SDS use the segregation procedure to identify the faulty node based on the multiple central fault records from the multiple linked SAs),*

wherein the first fault tracing detection request packet comprises a path identifier(ID), and wherein the path ID identifies a path of the service chain *(page 1, par (0004), line 1-10, obtaining one or more fault classification rules; identifying one or more fault nodes and associated fault conditions in the media network using the one or more fault classification rules, by analyzing the aggregated relevant fault reports; and providing an agent configuration instruction for one or more agent applications using the identification of the one or more fault nodes and associated fault conditions);*

determining to communicate with a first service function (SF) node on the service chain*(page 2, par(0023), line 1-10, Upon obtaining fault related data, agent device generate the central fault report, and provide it to diagnostics server (service function node) for fault detection);*

sending a first fault tracing detection response packet to device for initiating fault detection, wherein the first fault tracing detection response packet comprises the path ID and the ID of the first SF node *(page 5, par (0052), line 1-10, When SDS receives a central fault report perform service fault segregation to identify fault nodes where a fault have occurred, and rules to be executed by RE to identify remediation measures. SDS (wherein SDS which is smart diagnostic server does the SFS function obtain the fault information and sending the information) use service chain information and other received service faults to identify the nodes, SDS be able to identify dependencies between central fault records submitted by different SAs, a fault in one node cause several SAs linked to nodes with which the faulty node communicates to generate and send central fault records. SDS use the segregation procedure to identify the faulty node based on the multiple central fault records from the multiple linked SAs).*

Rajagopal discloses all aspects of the claimed invention, *except a service chain fault detection method implemented by a service forwarding entity (SFE), obtaining an ID of the first SF node.*

JOKELA is the same field of invention teaches a service chain fault detection method implemented by a service forwarding entity (SFE) *(page 3, par (0040), line 10-20, the SPEs in each node is operatively coupled to a Service Forwarding Entity (SFE),*

which routes the data packets to their intended physical and virtual nodes from an SFE point of view, the SPEs appears as virtual/physical nodes when a forwarding decisions is made based on an iBF of a data packet), obtaining an ID of the first SF node *(page 9, par (0088), line 1-10, the SFE receives an updated IBF where one more link identifiers as indicated in the complementing information has been included such that the data packet can be forwarded to its intended node, the SFE of the network node updates the IBF, the updated IBF is added to the data packet accordingly and forwarded to its intended destination).*

Rajagopal and JOKELA are analogous art because they are from the same field of endeavor of access to a service device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Rajagopal to include the teaching of JOKELA because it is providing iBF, determine that a service is to be provided by the virtual node SPE, before deriving the final destination from the iBF, which subsequently will deliver the data packet to its intended destination node.

Regarding **Claim 8**, Rajagopal discloses receiving, the first fault tracing detection request packet sent from the device; receiving; the first fault tracing detection request packet from a previous-hop SFE of the SFE on the service chain; or generating the first fault tracing detection request packet*(page 5, par (0052), line 1-10, When SDS receives a central fault report perform service fault segregation to identify fault nodes where a fault have occurred, and rules to be executed by RE to identify remediation measures.*

SDS (wherein SDS which is smart diagnostic server does the SFS function obtain the fault information and sending the information) use service chain information and other received service faults to identify the nodes, SDS be able to identify dependencies between central fault records submitted by different SAs, a fault in one node cause several SAs linked to nodes with which the faulty node communicates to generate and send central fault records. SDS use the segregation procedure to identify the faulty node based on the multiple central fault records from the multiple linked SAs).

Regarding **Claim 9**, Rajagopal discloses a service forwarding apparatus comprising a memory storing instructions; and a processor coupled to the memory and configured to execute die instructions, which causes the processor to be configured to obtain a first fault tracing detection request packet on a service chain *(page 5, par (0052), line 1-10, When SDS receives a central fault report perform service fault segregation to identify fault nodes where a fault have occurred, and rules to be executed by RE to identify remediation measures. SDS use service chain information and other received service faults to identify the nodes, SDS be able to identify dependencies between central fault records submitted by different SAs, a fault in one node because several SAs linked to nodes with which the faulty node communicates to generate and send central fault records. SDS use the segregation procedure to identify the faulty node based on the multiple central fault records from the multiple linked SAs)*,

wherein the first fault tracing detection request packet comprises a path identifier (ID), and wherein the path ID identifies a path of the service chain *(page 1, par (0004), line 1-10, obtaining one or more fault classification rules; identifying one or more fault*

nodes and associated fault conditions in the media network using the one or more fault classification rules, by analyzing the aggregated relevant fault reports; and providing an agent configuration instruction for one or more agent applications using the identification of the one or more fault nodes and associated fault conditions);

determine to communicate with a first service function (SF) node on the service chain*(page 2, par(0023), line 1-10, Upon obtaining fault related data, agent device generate the central fault report, and provide it to diagnostics server (service function node) for fault detection)*;

send a first fault tracing detection response packet to a device for initiating fault detection, wherein the first fault tracing detection response packet comprises the path ID and the ID of the first SF node *(page 5, par (0052), line 1-10, When SDS receives a central fault report perform service fault segregation to identify fault nodes where a fault have occurred, and rules to be executed by RE to identify remediation measures. SDS (wherein SDS which is smart diagnostic server does the SFS function obtain the fault information and sending the information) use service chain information and other received service faults to identify the nodes, SDS be able to identify dependencies between central fault records submitted by different SAs, a fault in one node cause several SAs linked to nodes with which the faulty node communicates to generate and send central fault records. SDS use the segregation procedure to identify the faulty node based on the multiple central fault records from the multiple linked SAs)*.

Rajagopal discloses all aspects of the claimed invention, except *obtain an ID of the first SF node.*

JOKELA is the same field of invention teaches obtain an ID of the first SF node *(page 9, par (0088), line 1-10, the SFE receives an updated IBF where one more link identifiers as indicated in the complementing information has been included such that the data packet can be forwarded to its intended node, the SFE of the network node updates the IBF, the updated IBF is added to the data packet accordingly and forwarded to its intended destination)*.

Rajagopal and JOKELA are analogous art because they are from the same field of endeavor of access to a service device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Rajagopal to include the teaching of JOKELA because it is providing iBF, determine that a service is to be provided by the virtual node SPE, before deriving the final destination from the iBF, which subsequently will deliver the data packet to its intended destination node.

Regarding **Claim 16**, Rajagopal discloses the processor is further configured to receive the first fault tracing detection request packet from the device; receive the first fault tracing detection request packet from a previous-hop SFE of the SFE on the service chain; or generate the first fault tracing detection request packet*(page 5, par (0052), line 1-10, When SDS receives a central fault report perform service fault segregation to identify fault nodes where a fault have occurred, and rules to be executed by RE to identify remediation measures. SDS (wherein SDS which is smart diagnostic server does the SFS function obtain the fault information and sending the*

information) use service chain information and other received service faults to identify the nodes, SDS be able to identify dependencies between central fault records submitted by different SAs, a fault in one node cause several SAs linked to nodes with which the faulty node communicates to generate and send central fault records. SDS use the segregation procedure to identify the faulty node based on the multiple central fault records from the multiple linked SAs).

Regarding **Claim 17**, Rajagopal discloses a computer program product comprising computer-executable instructions for storage on a non-transitory computer-readable medium that, when executed by a processor, cause a service forwarding apparatus to obtain a first fault tracing detection request packet on a service chain *(page 5, par (0052), line 1-10, When SDS receives a central fault report perform service fault segregation to identify fault nodes where a fault have occurred, and rules to be executed by RE to identify remediation measures. SDS use service chain information and other received service faults to identify the nodes, SDS be able to identify dependencies between central fault records submitted by different SAs, a fault in one node because several SAs linked to nodes with which the faulty node communicates to generate and send central fault records. SDS use the segregation procedure to identify the faulty node based on the multiple central fault records from the multiple linked SAs),*

wherein the first fault tracing detection request packet comprises a path identifier (ID), and wherein the path ID identifies a path of the service chain *(page 1, par (0004), line 1-10, obtaining one or more fault classification rules; identifying one or more fault nodes and associated fault conditions in the media network using the one or more fault*

classification rules, by analyzing the aggregated relevant fault reports; and providing an agent configuration instruction for one or more agent applications using the identification of the one or more fault nodes and associated fault conditions);

determine to communicate with a first service function (SF) node on the service chain*(page 2, par(0023), line 1-10, Upon obtaining fault related data, agent device generate the central fault report, and provide it to diagnostics server (service function node) for fault detection)*;

send a first fault tracing detection response packet to a device for initiating fault detection, wherein the first fault tracing detection response packet comprises the path ID and the ID of the first SF node *(page 5, par (0052), line 1-10, When SDS receives a central fault report perform service fault segregation to identify fault nodes where a fault have occurred, and rules to be executed by RE to identify remediation measures. SDS (wherein SDS which is smart diagnostic server does the SFS function obtain the fault information and sending the information) use service chain information and other received service faults to identify the nodes, SDS be able to identify dependencies between central fault records submitted by different SAs, a fault in one node cause several SAs linked to nodes with which the faulty node communicates to generate and send central fault records. SDS use the segregation procedure to identify the faulty node based on the multiple central fault records from the multiple linked SAs)*.

Rajagopal discloses all aspects of the claimed invention, except obtain an ID of the first SF node.

JOKELA is the same field of invention teaches obtain an ID of the first SF node *(page 9, par (0088), line 1-10, the SFE receives an updated IBF where one more link identifiers as indicated in the complementing information has been included such that the data packet can be forwarded to its intended node, the SFE of the network node updates the IBF, the updated IBF is added to the data packet accordingly and forwarded to its intended destination)*.

Rajagopal and JOKELA are analogous art because they are from the same field of endeavor of access to a service device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Rajagopal to include the teaching of JOKELA because it is providing IBF, determine that a service is to be provided by the virtual node SPE, before deriving the final destination from the IBF, which subsequently will deliver the data packet to its intended destination node.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IQBAL ZAIDI whose telephone number is (571)270-3943. The examiner can normally be reached on M to Thu 8.a.m to 6.p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q Ngo can be reached on 57-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IQBAL ZAIDI/

Primary Examiner, Art Unit 2464