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European Patent Application EP 19 160 813.2
SERVICE CHAIN FAULT DETECTION METHOD AND APPARATUS
Huawei Technologies Co., Ltd.

On the communication pursuant to Art. 94(3) EPC dated 30.07.2024:

It is requested to proceed with the examination on the basis of new claims 1 to 23 replacing the claims on file and the remaining documents as currently on file.

I. Amendments

Firstly, claim 8 has been amended to specify that "*sending, by the SFE, the first fault tracing detection request packet to a service function, SF, node*". This is originally disclosed in par. [0114] of the original description and step 502 of Fig. 9.

Secondly, claim 8 has been further amended to specify "*adding, by the SF node, an ID of the SF node to the first fault tracing detection request packet.*" This is disclosed in par. [0121] of the original description which discloses "*the SF node 121 adds an ID of the SF node 121 to the fault tracing detection request packet 1042 sent to the SFE 111.*"

Thirdly, claim 8 has been further amended to specify that "*sending, by the SF node, the first fault tracing detection request packet to the SFE*". This is originally disclosed in par. [0118] of the original description and step 503 of Fig. 9.

Finally, claim 8 has been amended to specify "*obtaining, by the SFE, the ID of the SF node from the first fault tracing detection request packet*". This is directly and unambiguously derivable from par. [0123] of the original description which discloses "*the first obtaining unit 1107 may obtain the ID of the SF node 121 from the fault tracing detection request packet 1042.*". The cited paragraph discloses that the firs obtaining unit is in the SFE node. Therefore, the first obtaining unit in the SFE obtaining the ID of the SF node discloses *"obtaining, by the SFE, an ID of the SF node"*.

Claim 19 has been amended in an analogous manner.

Thus, all amendments meet the requirements of Art. 123(2) EPC.

II. Two-part form, Rule 43(1) EPC

In response to the request for two-part form in section 4.1 of Office Action 5, OA5, it is submitted that the subject matter of new claims 1 and 8 relates to a method whose method steps are interrelated with each other, while the inventive step concerns changes in several of these interrelated method steps. Further, the subject matter of claims 12 and 19 relates to a complex apparatus of functionally inter-related parts, while the inventive step concerns changes in several of these parts of the apparatus. Therefore, the use of the two-part form is considered to be inappropriate, since it would give a distorted picture of the claimed invention and would lead to an artificial lack of clarity of the respective claim. Hence, it is requested to allow the one-part form in the present case.

III. Clarity

The Examining Division in Section 3.1 of OA5 objects that "*Claims 8 and 19 define "determining, by the device for initiating fault detection, that forwarding between the SFE and the SF node is normal based on the received ID of the SF node", without specifying how is actually achieved only by obtaining just one ID of an SF node*" and that *"The claims attempt to define the subject-matter in terms of the result to be achieved.*"

To proceed with the application in a favorable manner, claims 8 and 19 have been amended to clarify how the forwarding between the SFE and the SF node is determined to be normal based on the received ID of the SF node.

Specifically, new claims 8 and 19 now clearly specify steps wherein a first fault tracing request packet must traverse from the device for initiating fault detection to the SFE, then to the SF node, and back. Furthermore, new claims 8 and 19 also provide include steps wherein the SFE obtains the ID of the SF node after the SF node adds the ID to the

first fault tracing request packet and sends the first fault tracing detection request packet back to the SFE. Finally, the SFE obtains the ID of the SF node from the returned first fault tracing detection request packet. As a result, the device for initiating fault detection can determine that the forwarding between the SFE and SF node is normal based on this obtained ID of the SF node as the SF node has to receive the first fault tracing detection request packet, add an ID of the SF node to it and then successfully send the packet back to the SFE.

Thus, it is clear to the skilled person that the ID of the SF node is an indicator of normal forwarding as it can only be obtained after the SF node receives the first fault tracing request packet, adds the ID of the SF node to the packet and sends it back to the SFE. Therefore, if an ID of the SF node is obtained, then that means the first fault tracing request packet traversed through the SFE and SF node and back, that is, the forwarding between the SFE and SF node is normal.

In other words, if there were a fault between the SFE and SF node, the SF node would not be able to receive and/or send back the first fault tracing request packet. As a result, the SFE would not be able to obtain an ID of the SF node from the packet and the forwarding between the SFE and SF would be determined to be not normal, indicating a fault, which can be any sort of fault, between the SFE and SF node.

Therefore, at least new claims 8 and 19 clarify the steps leading up to obtaining the ID of the SF node and how this ID is used to determine that the forwarding between the SFE and SF node is normal.

Thus, at least all new claims meet the requirements of Art. 84 EPC.

IV. Novelty and Inventive Step

The Examining Division in Section 1 of the Office Action concedes that claims 1, 12 and 23 are novel and inventive. Furthermore, the Examining Division seemingly concedes that claims 8 and 19 are also novel and inventive - the only clarity objection has been overcome.

V. Conclusion

In view of the amendments made and the above explanations, it is believed that the application is now in a state acceptable for grant. Should the Examining Division, nevertheless, still see deficiencies in the documents on file, it is kindly asked to give the applicant the opportunity to file further arguments and, if necessary, amendments. Minor issues could be discussed by telephone.

Only as a measure of precaution,

Oral Proceedings

are herewith requested. In this event, it is further requested that the Oral Proceedings be either held in Munich, or by videoconference.

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Dr. Matthias Hofmann

Enclosures:
New claims 1 to 23, clean copy
New claims 1 to 23, marked-up version