

BOEHMERT & BOEHMERT Pettenkoferstraße 22 80336 München Germany

Online filingEuropäisches Patentamt
80298 MünchenIhr Zeichen / your ref.
22 794 201.8

Ihre Nachricht / your letter

Unser Zeichen / our ref.
H14360WOEPMünchen
17.03.2025Dr. Matthias Hofmann
Pettenkoferstraße 22
80336 München
GermanyT +49-89 559680
F +49-89-559685090
hofmann@boehmert.de
www.boehmert.de**European Patent Application EP 22 794 201.8
DATA BACKUP METHOD AND SYSTEM, AND RELATED
DEVICE
Huawei Cloud Computing Technologies Co., Ltd.**

On the communication pursuant to Rules 70(2) and 70a(2) EPC dated 17.09.2024, the EPO is hereby informed that the applicant wishes to proceed further with the European patent application.

It is requested to begin with the examination on the basis of new claims 1 to 15 replacing the claims on file, new description pages 1 to 9 replacing description pages 1 to 9 on file, and the remaining documents as currently on file.

I. Amendments

New claim 1 combines the features of previous claims 1, 5 and 7. Original disclosure can be found in original claims 1, 5 and 7.

Furthermore, new claim 1 is amended to specify that *“wherein the primary cluster includes a first component and a second component, the secondary cluster includes a third component and a fourth component, the third component is used as backup of the first component, the fourth component is used as backup of the second component.”* Original disclosure can be found in e.g., par. [0068] of the original description and original Fig. 2.

New claim 1 has been further amended to specify that *“the first component and the second component store data in different*

Dr. Ing. Karl Boehmert PA (1899–1973)
Dipl.-Ing. Albert Boehmert PA (1902–1993)
Wilhelm J. H. Stahlberg RA, Bremen
Dr.-Ing. Walter Hoormann PA*, Bremen
Prof. Dr. Heinz Goddar PA*, München, Shanghai
Wolf-Dieter Kuntze RA, Bremen
Dr. Ludwig Kouker RA, Bremen
Dipl.-Ing. Eva Liesegang PA*, München
Dr.-Ing. Matthias Philipp PA*, Bielefeld
Dr. Martin Vitz RA, Düsseldorf, Berlin
Dr. Carl-Richard Haarmann RA, München, Düsseldorf
Dipl.-Phys. Christian W. Appelt PA*, München
Dipl.-Phys. Dr.-Ing. Uwe Manasse PA*, Bremen
Dipl.-Phys. Dr. Thomas L. Bittner PA*, Berlin
Dr. Volker Schmitz-Fohrmann, M. JUR. RA, München, Paris
Dipl.-Biochem. Dr. Markus Engelhard PA*, München
Dipl.-Chem. Dr. Karl-Heinz B. Metten PA*, Frankfurt
Dr. Florian Schwab, LL.M. RA, Lic en droit, München
Dr. Andreas Dustmann, LL.M. RA, Berlin, Alicante
Dipl.-Chem. Dr. Volker Scholz PA*, Bremen
Dr. Martin Schaefer RA, Berlin
Dipl.-Phys. Dr. Michael Hartig PA*, München, Paris
Dipl.-Phys. Dr. Steffen Schmidt PA*, München
Dr. Andreas Lucke PA*, München
Dipl.-Chem. Dr. Ute Kliger PA*, Berlin
Malte Nentwig, LL.M. RA, Bremen
Dr. Rudolf Böckenholt, LL.M. RA, Bremen
Peter Groß, LL.M. RA, München, Alicante
Dipl.-Ing. Felix Hermann PA*, München
Dr. Michael Rüberg, LL.M. RA, München, Paris
Dipl.-Phys. Christoph Angerhausen PA*, Düsseldorf
Dipl.-Inform. Dr. Jakob Valvoda PA*, München
Dipl.-Chem. Dr. Martin Erbacher PA*, Bremen
Dr. Daniel Hermann PA*, Frankfurt, München
Dr. Sebastian Engels RA, Berlin
Silke Freund RA, München
Dipl.-Phys. Dr. Matthias Hofmann PA*, München
Dr. Eckhard Ratjen, LL.M. RA, Bremen
Dipl.-Phys. Dr. Jin Jeon PA*, München
Dr. Mario Araujo** PA*, München
–
Dipl.-Ing. Oliver Tarvenkom PA*, Düsseldorf, Bielefeld
Dr. Katrin Seibt RA, Bremen
Dipl.-Biochem. Dr. Sibylla M. Grahn PA*, München (2007-2024)
Dipl.-Phys. Dr. Xia Pfaffenzer PA*, München
Dipl.-Inform. Fritz Jetzek PA, Bremen
Claudia Deppe RA, München
Dr. Anja Ruge, LL.M. RA, Berlin, München
Mehmet Bengi-Akyürek PA*, München
Dr. Lars Eggendorfer RA, München
Dipl.-Ing. Dr. Sebastian Schlegel PA*, Berlin
Dipl.-Chem. Robert Bernin PA*, Bremen
Dipl.-Ing. Jan Göring PA*, Frankfurt
Dr. Laura Haas, M.Sc. PA*, München
Dr. Hanno Fientje PA*, München
Dr. Lara Gwinner PA*, München
Dr. Alexander Thamer RA, Berlin
Dr.-Ing. Michael Rübsamen PA*, München
Dipl.-Phys. Dr. Michael Lohse PA*, München
Dr.-Ing. Jonas Boschung, M.Sc., M.Sc. PA*, Düsseldorf
Dipl.-Phys. Dr. Adrian Steffens PA*, Berlin
Melanie Müller RA, Bremen
Dipl.-Phys. Dr. Giulio Schöber PA*, München
Micheline Verwohlt RA, München
Nina Rücker RA, München
Dr. Makiko Maruyama*, M.Sc., München
Théodore Ley*, München
Dr. Oleg Lebedev*, Berlin
Fabio Adinolfi RA, München
Dipl.-Chem. Dr. José M. Pfizer PA*, Berlin, München
Matte Windeler, LL.M. oec. RA, Bremen
Dipl.-Ing. Bernhard Jochim PA*, Düsseldorf
Dr. Julian Wernicke, LL.M. (UCT) RA, Berlin
Dipl.-Phys. Dr. habil. Daniel Niesner PA*, München
Hannah Dauer, LL.M. RA, München
Stella Euchner RA, München
Dr. Jan Bohl, M.Sc. PA, Frankfurt
Dr.-Ing. Dominik Denker, M.Sc. PA, Düsseldorf
Victor V. Fetscher, LL.M. (Tel Aviv) RA, München
Dr.-Ing. Thomas Michaelis PA*, München

BOEHMERT & BOEHMERT Anwaltspartnerschaft mbB • Patentanwälte Rechtsanwälte • AG Bremen-PR 358 HB
München • Bremen • Berlin • Düsseldorf • Frankfurt • Bielefeld • Alicante • Paris • ShanghaiInformation about data protection and your rights as data subjects:
www.boehmert.com/data-protectionPA Patentanwalt/Patent Attorney *European Patent Attorney
RA Rechtsanwalt/Attorney at Law (Germany)
** Agente de la Propiedad Industrial (Spain) / Spain)
Vertretung vor dem EUIPO – Marken und Designs
Representation at EUIPO – Trade marks and Designs

formats, the third component and the fourth component store data in different formats." Original disclosure can be found in e.g., pars. [0068], [0077] and [0078] of the original description.

New claim 11 combines the features of previous claims 13 and 15. Original disclosure can be found in original claims 13 and 15.

New claim 11 has been further amended in the same way as new claim 1.

Previous claims 5, 7 and 15 have been cancelled.

All claims have been provided with reference signs, where appropriate.

The description has been amended to acknowledge the prior art known from documents D1 to D6 and to reflect the new claims.

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

II. Clarity

The Search Division in section 2.1.1 of the European Search Opinion (ESOP) objects that "[...] *the subject-matter of claim 13 comprises merely a subset of features of the features of claim 1.*" and therefore, claims 1 and 13 do not fall within one or more of the exceptional situations out in paragraph (a), (b) or (c) of Rule 43(2) EPC.

The applicant respectfully disagrees.

The objective technical problem solved by claims 1 and 13 (new claims 1 and 11) is how to improve reliability of a data backup system.

Claim 1 approaches the problem from the controlling device's perspective (the controlling phase) while claim 13 (new claim 11) approaches this problem from the executing/primary cluster's perspective (executing phase).

Specifically, both claims represent alternative solutions to the problem of coordinating data backup between clusters. Specifically, claims 1 and 13 (new claims 1 and 11) describe fundamentally different technical implementations (i.e., controlling versus executing) and involve different components of a data backup system with distinct responsibilities. Combining claims 1 and 13 (new claims 1 and 11) would result in an unnecessarily complex and unclear claim.

Therefore, both claims 1 and 13 (new claims 1 and 11) fall under Rule 43(2)(c) of the EPC which allows more than one independent claim in the same category if they involve *"alternative solutions to a particular problem, where it is not appropriate to cover these alternatives by a single claim."*

In section 2.2 of the ESOP, the Search Division argues that claim 5 is unclear and that: *"the information that is about the plurality of data sets ... and that is entered by a user and the first moment" cannot be clearly understood.*

The applicant notes that at least new claim 1 (which incorporates the features of previous claim 5) is clear when read in its entirety. The phrase *"configuring, by the control device, a first data backup policy for a first service based on: information about a plurality of data sets related to the first service and that is entered by a user; and a first moment"* indicates two separate bases for configuring the backup policy:

(1) information about data sets that is entered by a user, and

(2) the first moment.

The first moment refers to a specific point in time at which the data sets exist in the primary cluster and are to be backed up, as clarified in the subsequent limitation stating *"to back up, to the secondary cluster, the plurality of data sets related to the first service that are in the primary cluster and that are at the first moment."* Therefore, it is clear from new claim 1 that "the first moment" serves as a temporal identifier for the state of data to be backed up, not as a modifier of user-entered information.

Thus, at least new claim 1 is clear.

In section 2.3.1 of the ESOP, it is objected that it is not clear how a certain system state, which is described by a particular set of status information, established by each client, allows to determine that one of the clients are accessed by an application.

To proceed with the application in a favorable manner, new claim 6 (previous claim 8) has been amended to specify that the control device in fact determines based on the first and second status information that the client accessing the cluster is switched to the secondary client.

It is clear to the skilled person that the status information obtained through detection of a client directly corresponds to the status of its corresponding cluster (primary or secondary) and therefore, based on the identity provided in the status information, the control device can determine which client is accessing the service.

Specifically, when the first and second status information is obtained, the controller determines which cluster is acting as a backup (the one with the secondary identity) and which cluster is providing the service (the one with the primary identity). With this information, the controller can determine which client is the one connected to the cluster providing the service.

Thus, all amendments meet the requirements of Art. 84 EPC.

III. Claim 1

Novelty

As conceded by the Search Division in 3.1 of the ESOP, D1 does not disclose:

- a) *a secondary cluster,*
- b) *the primary cluster or the secondary cluster to back up, to the secondary cluster.*

D1 discloses methods and systems for using high availability attributes to define data protection plans, focusing on backing up highly available data within a high availability cluster.

Specifically, D1 discloses that in column 5 lines 23 to 26 that "*each machine 125, 130 includes a high availability agent 140 that performs operations with regards to load balancing, synchronizing a state between machines 125, 130, and so forth.*" and in column 6 lines 59 to 64 discloses that "*the HA agent 140 on the primary machine 125 periodically takes a snapshot (a point-in-time image) of the state of the application at the primary machine, including the state of the high availability data 145, and sends this snapshot to the high availability agents 140 on the standby machines 130..*"

Furthermore, the applicant respectfully submits that D1 does not disclose:

- c) *the primary cluster includes a first component and a second component, the secondary cluster includes a third component and a fourth component, the third component is used as backup of the first component, the fourth component is used as backup of the second component, the first component and the second component store data in different formats, the third component and the fourth component store data in different formats.*

Furthermore, as apparently already conceded by the Search Division, D1 does not disclose:

- d) *the plurality of data sets related to the first service comprise a data set processed or stored by the first component in the primary cluster and a data set processed or stored by the second component in the primary cluster.*

Thus, the subject matter of claim 1 is new. The same considerations apply *mutatis mutandis* to new claims 14 and 15.

Inventive Step

D1 is considered as closest prior art. D1 does not disclose the above-mentioned distinguishing features a) to d).

The distinguishing features have the technical effect that when service data of multiple components needs to be synchronized, ensure that the time of service data synchronization between multiple components is consistent. Therefore, time consistency is maintained during backup of the same service of a user. This improves reliability of a data backup system.

Therefore, the objective technical problem can be seen in how to improve reliability of a data backup system.

Starting from D1, the skilled person would find no hints towards the claimed subject matter. D1 teaches that the highly available data, that is data determined by a data protection agent/server, from a high availability cluster may be backed up to a data protection agent or server. Specifically, D1 discloses in lines 23 to 26 of column 5 that "*each machine 125, 130 includes a high availability agent 140 that performs operations with regards to load balancing, synchronizing a state between machines 125, 130, and so forth.*"

However, D1 does not disclose the feature in the amended claim 1 of the present application wherein an architecture in which service data in multiple components synchronization is required. Thus, D1 provides no hints towards how to solve the problem of in the same way as claim 1.

When starting from D1 and tasked with solving the objective technical problem, the skilled person might consider D2 to D6. However, D2 to D6 also does not provide any hints towards the claimed solution. Thus, even if the skilled person were to combine the prior art known from D1 and D6 to solve the objective technical problem, they would not be able to arrive at the claimed subject-matter.

The same considerations apply *mutatis mutandis* to claims 14 and 15, which therefore also rely on an inventive step.

IV. Claim 11

Novelty

As conceded by the Search Division in Section 4.1 of the ESOP, D3 does not disclose:

- e) *obtaining, by the primary cluster, an instruction delivered by the control device, wherein the instruction comprises the information about the plurality of data sets related to the first service and the first moment,*
- f) *backing up, by the primary cluster to the secondary cluster based on the instruction, the plurality of data sets related to the first service that are in the primary cluster and that are at the first moment.*

Meanwhile, the applicant respectfully submits that, D3 does not disclose:

- g) *the primary cluster includes a first component and a second component, the secondary cluster includes a third component and a fourth component, the third component is used as backup of the first component, the fourth component is used as backup of the second component, the first component and the second component store data in different formats, the third component and the fourth component store data in different formats;*
- h) *configuring, by the control device, a first data backup policy for a first service based on: information about a plurality of data sets related to the first service and that is entered by a user; and a first moment, wherein the plurality of data sets related to the first service comprise a data set processed or stored by the first component in the primary cluster and a data set processed or stored by the second component in the primary cluster.*

As noted by the Search Division in Section 6.4.1 of the ESOP, D3 discloses "*data synchronization between clusters ... according to pre-set rules*". However, D3 does not disclose feature g) of new claim 1 of the present application. The feature specifies an architecture in which service data in multiple components synchronization is required. Thus, D3 provides no hints towards this kind of architecture.

Thus, the subject matter of claim 11 is new. The same considerations apply *mutatis mutandis* to new claim 14.

Inventive Step

D3 is considered as closest prior art. D1 does not disclose the above-mentioned distinguishing features e) to h).

The distinguishing features have the technical effect that when service data of multiple components needs to be synchronized, ensure that the time of service data synchronization between multiple components is consistent. Therefore, time consistency is maintained during backup of the same service of a user. This improves reliability of a data backup system.

Therefore, the objective technical problem can be seen in how to improve reliability of a data backup system.

Starting from D3, the skilled person would find no hints towards the claimed solution. D3 teaches that by synchronizing data defined by pre-set rules between a main and a backup cluster, the backup cluster may take over the responsibilities of the main cluster when the main cluster fails. However, D3 provides no hints towards the distinguishing features of new claim 1 of the present application. Specifically, D3 does not provide any hints towards feature g) which specifies an architecture in which service data in multiple components synchronization is required. Thus, D3 provides no hints towards how to solve the objective technical problem in the same way as new claim 11.

To solve the objective technical problem, the skilled person might come across D2 when starting from D3. Specifically, D2 focuses on scalable cloud backup using a coordinator process and worker processes to package data for cloud storage. However, D2 provides no hints towards the claimed solution. Thus, even if the skilled person were to combine the prior art known from D3 and D2 to solve the objective technical problem, they would not be able to arrive at the claimed subject-matter.

To solve the objective technical problem, the skilled person might come across D4 when starting from D3. D4 focuses on remote copying of data based on policy tags to reduce resource or processing load. However, D4 also does not provide any hints towards the claimed solution. Thus, even if the skilled person were to combine the prior art known from D3 and D4 to solve the objective technical problem, they would not be able to arrive at the claimed subject-matter.

To solve the objective technical problem, the skilled person might come across D5 when starting from D3. D5 discusses synchronizing the clock time of all nodes in a cluster to ensure they are in sync with a standard external time server, which is unrelated to the backup and synchronization of user data between primary and secondary clusters as

claimed. Thus, even if the skilled person were to combine the prior art known from D3 and D5 to solve the objective technical problem, they would at an alternative solution.

To solve the objective technical problem, the skilled person might come across D6 when starting from D3. D6 focuses on ensuring continuity of user services through redundancy and backup mechanisms involving cloud devices, which is different from the claimed method of backing up data sets related to a service based on a specific backup policy and synchronizing user data. Thus, even if the skilled person were to combine the prior art known from D3 and D6 to solve the objective technical problem, they would not be able to arrive at the claimed subject-matter.

The same considerations apply *mutatis mutandis* to claim 14, which therefore also relies on an inventive step.

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.

BOEHMERT & BOEHMERT



Dr. Matthias Hofmann

Enclosures:

- New claims 1 to 15, clean copy
- New claims 1 to 15, marked-up version
- New description pages 1 to 9, clean copy
- New description pages, marked-up version