Unified Patent Court
Einheitliches Patentgericht
Juridiction unifiée du brevet

Hamburg - local division

UPC_CFI_54/2023

Decision

of the Court of First Instance of the Unified Patent Court local division

Hamburg

issued on 26 August 2024

GUIDING PRINCIPLES

1. Failure to use the workflow provided by CMS does not preclude compliance with a time limit resulting from the Rules of Procedure, Rule 4.1 sentences 1 and 2 RoP. At least in the initial phase of the UPC - the present action was filed on the first day of the UPC's commencement of operations, 1 June 2023 - it is appropriate to apply a more generous standard.

2. Even in revocation proceedings before the UPC, a patent can only be revoked in accordance with Art. 65 (3) UPCA to the extent that the grounds for revocation are sufficient, so that a patent can also remain (partially) valid to the extent of individual independent patent claims within the scope of the complete set of claims filed as a main or auxiliary request. This applies to independent claims if they do not build on each other in such a way that the cancellation of one would necessarily require the cancellation of the other because they would be closed sets of claims.

KEYWORDS

Calculation of time limits; use of CMS workflows, Rule 4.1 sentences 1 and 2 RoP, Rule 30.1 RoP in conjunction with R. 29 lit (a) RoP.

Partial invalidity, Art. 65(3) UPCA, Art. 138(3) EPC CLAIMANT

Avago Technologies International Sales Pte. Limited (applicant) - 1 Yishun Avenue 7 - 768923 - Singapore - SG	Represented by Florian Schmidt-Bogatzky

DEFENDANT

1)	**Tesla Germany GmbH** (defendant) - Ludwig-Prandtl-Straße 27-29 - 12526 Berlin - DE	Represented by Dr Marcus Grosch
2)	**Tesla Manufacturing Brandenburg SE** (defendant) - Tesla Str. 1 - 15537 Grünheide (Mark) - DE	Represented by Dr Marcus Grosch

PATENT IN SUIT

Patent number	Proprietor
EP1612910	**Avago Technologies International Sales Pte. Limited**

ADJUDICATING BODY

This decision was delivered with the participation of presiding judge Klepsch, legally qualified judges Dr Schilling as judge-rapporteur and Dr Schober, and technically qualified judge Dr Kapels.

OBJECT

Action for infringement and action for annulment

ORAL NEGOTIATION

19. June 2024

BRIEF SUMMARY OF THE FACTS

The parties are disputing the infringement of a patent by the defendants and counterclaiming for the validity of the patent.

The plaintiff is part of [redacted] , a global leader in the field of semiconductor technology.

The defendants are part of the Tesla automotive group. Defendant 2) has been producing "Teslas" at the Grünheide site near Berlin since March 2022 and sells them on the German market throughout the Federal Republic of Germany. Defendant 1) is Tesla's subsidiary based in Germany and responsible for the distribution of Tesla products and services within the scope of the patent in suit.

Since 15 March 2017, the plaintiff has been registered as the (sole) proprietor of the European patent EP 1 612 910 B1 (hereinafter referred to as the "patent in suit" or "patent in dispute") with the title "Monitoring circuit for the on-board power supply and power supply control" (see patent in dispute as Annex EIP 2) - however, its substantive entitlement is in dispute between the parties.

The patent in suit generally relates to controlling the power supply of electronic circuits and their modules. The patent in suit is based on an application filed by [redacted] on 24 June 2005 and claims the priority of the patent applications US 583516 P of 28 June 2004 and US 157577 P of 21 June 2005. The application was published on 4 January 2006 and the mention of the grant of the patent was published on 14 September 2011. The patent in suit is in force in Germany (extract from the register in Annex EIP 3). The patent in suit has not undergone any opposition or nullity proceedings.

Claim 1 of the patent in suit, as granted, reads as follows in the language of grant (see patent in suit, Annex WK 1):

A Power control system (600), comprising:

a first electrical device (610) that receives electrical power (611),

a second electrical device (615) that receives electrical power (616),

a power supply circuit (640) that provides the electrical power to the first and second electrical devices (610, 615),

an integrated circuit (620), said integrated circuit comprising a first module (622) and a second module (624),

the first module being adapted to monitor at least one characteristic of the electrical power (611) received by the first electrical device (610) and at least one characteristic of electrical power (616) received by the second electrical device (615),

the second module being adapted to communicate with a third electrical device (630) regarding the at least one characteristic of the electrical power monitored by the first module (622),

the third electrical device (630) adapted to receive information regarding the at least one monitored power characteristic of the first and second electrical devices from the second module (624),

characterised in that

the third electrical device is adapted to process the received information to determine a power adjustment command and communicate the command to the power supply circuit (640).

In German translation:

Leistungssteuerungssystem (600) mit:

a first electrical device (610) which receives electrical current (611), a second electrical device (615) which receives electrical current (616),

a power supply circuit (540) which supplies the electric current to the first and second devices (610, 615),

an integrated circuit (620), wherein the integrated circuit comprises a first module (622) and a second module (624),

wherein the first module is adapted to monitor at least one characteristic of the current (611) received from the first electrical device (610) and at least one characteristic of the electrical current (616) received from the second electrical device (615),

wherein the second module is adapted to communicate with a third electrical device (630) regarding the at least one characteristic of the electrical current monitored by the first module (622),

wherein the third electrical device (630) is adapted to receive information regarding the at least one monitored performance characteristic of the first and second electrical devices from the second module (624), characterised in that

the third electrical device is adapted to process the received information to determine a current adjustment command and communicate the command to the power supply circuit (640).

Claim 2 of the patent in suit reads as follows in the language of grant:

The power control system (600) of claim 1, characterised in that

the third electrical device is adapted to arbitrate between the first and second electrical devices, such arbitration considering the power supply needs and/or priorities of the first and second electrical devices.

In German translation:

The power control system (600) according to claim 1, characterised in that the third electrical device is adapted to mediate between the first and second electrical devices, wherein the mediation takes into account the power supply requirements and/or priorities of the first and second electrical devices.

Claim 3 of the patent in suit reads as follows in the language of grant: A

method (800) for controlling power, comprising the steps of

Monitoring (820) at least one characteristic of electrical power received by a first electrical device,

Monitoring (830) at least one characteristic of electrical power received by a second electrical device,

Determining power control information from an analysis of electrical power characteristics monitored at steps 820 and 830,

Characterised in that

the step of determining power control information comprises determining a power adjustment command, which may be interpreted and processed by a power supply circuitry that receives the command, and

characterised by

communicating the power control information to power supply circuitry that provides the electrical power to the first and second electrical devices.

In German translation:

A method (800) of controlling power comprising the following steps:

Monitoring (820) at least one characteristic of electrical current received from a first electrical device,

Monitoring (830) at least one characteristic of electrical current received from a second electrical device,

Determining power control information from an analysis of electrical power characteristics monitored in steps 820 and 830, characterised in that

the step of obtaining power control information comprises obtaining a power adjustment command that can be interpreted and processed by a power supply circuit receiving the command, and characterised by

Communicating the power control information to the power supply circuit that supplies the electrical current to the first and second electrical devices.

The plaintiff objects to the fact that the defendant 1) offers and sells the Tesla Model Y (hereinafter referred to as the "challenged embodiment") on its website. This vehicle works - undisputedly in this respect - with a Tesla computer with an infotainment processor with the designation "AMD Ryzen". The power supply of the
"AMD Ryzen" processor takes place - also undisputed in this respect - via an MP 2858 chip and a total of five MP NM 8694 chips, which are arranged and interconnected together with the "AMD Ryzen" processor on a common circuit board of the Tesla computer. The plaintiff complains that, in its opinion, the components mentioned make use of the teaching of the patent in suit here. It also holds the defendant (2) responsible for the sale of the accused embodiment by adopting the offer and distribution of the accused embodiment. In any event, as a participant, it promotes the sale of the accused embodiment by the defendant 1).

APPLICATIONS BY THE PARTIES

In the Reply, the applicant has updated its applications and supplemented them with auxiliary requests (see updated version of the application in Annex EIP 8), which are based on an auxiliary limited defence of the patent pursuant to R. 30.1 (a) RoP. The previous "in particular" additions based on claims 2 and 4 have now been made the subject of the respective auxiliary requests 1. The plaintiff has furthermore

The company filed a further auxiliary request 1bis for amendment of the patent in suit at the oral hearing.

The plaintiff finally applied for

I. The defendants are ordered to refrain from

1. Performance management systems,
to manufacture, offer and/or place on the market in the Federal Republic of Germany, to use or to import or possess for the aforementioned purposes, with: a first electrical device that receives electrical current,
a second electrical device that receives electrical current,
a power supply circuit that supplies the electrical current to the first and second devices,
of an integrated circuit, the integrated circuit having a first module and a second module,
wherein the first module is adapted to monitor at least one characteristic of the current received from the first electrical device and at least one characteristic of the current received from the second electrical device,
wherein the second module is adapted to communicate with a third electrical device with respect to the at least one characteristic of the electrical current monitored by the first module,
wherein the third electrical device is adapted to receive information relating to the at least one monitored performance characteristic of the first and second electrical devices from the second module,
and wherein the third electrical device is adapted to process the received information to determine a current adjustment command and communicate the command to the power supply circuit.
(EP 1 612 910 B1, granted claim 1, direct infringement);

2. Devices
to offer, place on the market or use in the Federal Republic of Germany, or to either import or possess for the aforementioned purposes, which is suitable for carrying out a procedure for controlling power, whereby the procedure includes
Monitoring at least one characteristic of electric current received by a first electrical device,
Monitoring at least one characteristic of electrical current received from a second electrical device,
Determining power control information from an analysis of electrical power characteristics monitored in the above two monitoring steps,
wherein the step of determining power control information comprises determining a power adjustment command that can be interpreted and processed by a power supply circuit that receives the command, and
wherein the method is further characterised by

Communicating of the power control information to the power supply circuit that supplies the electrical current to the first and second electrical devices.
(EP 1 612 910 B1, granted claim 3, contributory infringement);

In the alternative

3. Performance management systems,
to manufacture, offer and/or place on the market in the Federal Republic of Germany, to use or to import or possess for the aforementioned purposes, with: a first electrical device that receives electrical current,
a second electrical device that receives electrical current,
a power supply circuit that supplies the electrical current to the first and second devices,
of an integrated circuit, the integrated circuit having a first module and a second module,
wherein the first module is adapted to monitor at least one characteristic of the current received from the first electrical device and at least one characteristic of the current received from the second electrical device,
wherein the second module is adapted to communicate with a third electrical device with respect to the at least one characteristic of the electrical current monitored by the first module,
wherein the third electrical device is adapted to receive information relating to the at least one monitored performance characteristic of the first and second electrical devices from the second module,
and wherein the third electrical device is adapted to process the received information to determine a current adjustment command and communicate the command to the power supply circuit,
to request the power supply circuit (640) to modify the supplied electrical current.
(EP 1 612 910 B1, claim 1 according to **auxiliary request 0a**, direct infringement);

or

Performance management systems,
to manufacture, offer and/or place on the market in the Federal Republic of Germany, to use or to import or possess for the aforementioned purposes, with: a first electrical device that receives electrical current,
a second electrical device that receives electrical current,
a power supply circuit that supplies the electrical current to the first and second devices,
of an integrated circuit, the integrated circuit having a first module and a second module,
wherein the first module is adapted to monitor at least one characteristic of the current received from the first electrical device and at least one characteristic of the current received from the second electrical device,
wherein the second module is adapted to communicate with a third electrical device with respect to the at least one characteristic of the electrical current monitored by the first module,

wherein the third electrical device is adapted to receive information relating to the at least one monitored performance characteristic of the first and second electrical devices from the second module,
and wherein the third electrical device is adapted to process the received information to determine a current adjustment command and communicate the command to the power supply circuit,

wherein the third electrical device is adapted to mediate between the first and second electrical devices, the mediation taking into account the power supply requirements and/or priorities of the first and second electrical devices,
(EP 1 612 910, claim 1 according to **auxiliary request 1**, direct infringement) in particular if
the third electrical device is further adapted to request the power supply circuit (640) to modify the supplied electrical current.
(EP 1 612 910, claim 1 according to **auxiliary request 1a**, direct infringement)

or

Performance management systems,
to manufacture, offer and/or place on the market in the Federal Republic of Germany, to use or to import or possess for the aforementioned purposes, with: a first electrical device that receives electrical current,
a second electrical device that receives electrical current,
a power supply circuit that supplies the electrical current to the first and second devices,
of an integrated circuit, the integrated circuit having a first module and a second module,
wherein the first module is adapted to monitor at least one characteristic of the current received from the first electrical device and at least one characteristic of the current received from the second electrical device,
wherein the second module is adapted to communicate with a third electrical device with respect to the at least one characteristic of the electrical current monitored by the first module,
wherein the third electrical device is adapted to receive information relating to the at least one monitored performance characteristic of the first and second electrical devices from the second module,
and wherein the third electrical device is adapted to process the received information to determine a current adjustment command and communicate the command to the power supply circuit, and

wherein the first electrical device (610) is a microprocessor circuit and wherein the second electrical device (615) is a memory circuit.
(EP 1 612 910, claim 1 according to **auxiliary request 2**, direct infringement) in particular if
the third electrical device is further adapted to request the power supply circuit (640) to modify the supplied electrical current.

(EP 1 612 910, claim 1 according to **auxiliary request 2a**, direct infringement)

or

Performance management systems,
to manufacture, offer and/or place on the market in the Federal Republic of Germany, to use or to import or possess for the aforementioned purposes, with: a first electrical device that receives electrical current,
a second electrical device that receives electrical current,
a power supply circuit that supplies the electrical current to the first and second devices,
of an integrated circuit, the integrated circuit having a first module and a second module,
wherein the first module is adapted to monitor at least one characteristic of the current received from the first electrical device and at least one characteristic of the current received from the second electrical device,
wherein the second module is adapted to communicate with a third electrical device with respect to the at least one characteristic of the electrical current monitored by the first module,
wherein the third electrical device is adapted to receive information relating to the at least one monitored performance characteristic of the first and second electrical devices from the second module,
and wherein the third electrical device is adapted to process the received information to generate a current adjustment command.
and to communicate the command to the power supply circuit, whereby
the third electrical device is adapted to mediate between the first and second electrical devices, the mediation taking into account the power supply requirements and/or priorities of the first and second electrical devices, and

wherein the first electrical device (610) is a microprocessor circuit and wherein the second electrical device (615) is a memory circuit.

(EP 1 612 910, claim 1 according to **auxiliary request 3**, direct infringement)

In particular, if

the third electrical device is further adapted to request the power supply circuit (640) to modify the supplied electrical current.

(EP 1 612 910, claim 1 according to **auxiliary request 3a**, direct infringement)

4. Devices
to offer, place on the market or use in the Federal Republic of Germany, or to either import or possess for the aforementioned purposes, which is suitable for carrying out a procedure for controlling power, whereby the procedure includes
Monitoring at least one characteristic of electric current received by a first electrical device,
Monitoring at least one characteristic of electrical current received from a second electrical device,

Determining power control information from an analysis of electrical power characteristics monitored in the above two monitoring steps,

wherein the step of determining power control information comprises determining a power adjustment command that can be interpreted and processed by a power supply circuit receiving the command, and

wherein the method is further characterised by

Communicating the power control information to the power supply circuit that supplies the electrical current to the first and second electrical devices,

whereby

the step of determining power control information comprises determining information for mediating between the first and second electrical devices, wherein the mediation takes into account the power supply requirements and/or priorities of the first and second electrical devices.

(EP 1 612 910, claim 2 according to **auxiliary request 1**, contributory infringement)

or

Devices

to offer, place on the market or use in the Federal Republic of Germany, or to either import or possess for the aforementioned purposes, which is suitable for carrying out a procedure for controlling power, whereby the procedure includes

Monitoring at least one characteristic of electric current received by a first electrical device,

Monitoring at least one characteristic of electrical current received from a second electrical device,

Determining power control information from an analysis of electrical power characteristics monitored in the above two monitoring steps,

wherein the step of determining power control information comprises determining a power adjustment command that can be interpreted and processed by a power supply circuit receiving the command, and

wherein the method is further characterised by

Communicating of the power control information to the power supply circuit that supplies the electrical current to the first and second electrical devices,

wherein the first electrical device (610) is a microprocessor circuit and wherein the second electrical device (615) is a memory circuit. (EP 1 612 910, claim 3 according to **auxiliary request 2**, contributory infringement)

or

Devices

to offer, place on the market or use in the Federal Republic of Germany or to either import or possess for the aforementioned purposes, which is suitable for carrying out a procedure for controlling power, whereby the procedure comprises

Monitoring at least one characteristic of electric current received by a first electrical device,
Monitoring at least one characteristic of electrical current received from a second electrical device,
Determining power control information from an analysis of electrical power characteristics monitored in the above two monitoring steps,
wherein the step of determining power control information comprises determining a power adjustment command that can be interpreted and processed by a power supply circuit that receives the command, and
wherein the method is further characterised by
Communicating of the power control information to the power supply circuit that supplies the electrical current to the first and second electrical devices, wherein
the step of determining power control information comprises determining information for mediating between the first and second electrical devices, wherein the mediation takes into account the power supply requirements and/or priorities of the first and second electrical devices,
wherein the first electrical device (610) is a microprocessor circuit and wherein the second electrical device (615) is a memory circuit. (EP 1 612 910, claim 2 according to **auxiliary request 3**, contributory infringement)

II. [not provided]

III. The defendants are ordered to pay the damages described under I.1.. and placed on the market since 29 October 2018. October 2018 to the commercial customers in writing with reference to the judicially (judgement of the ... of ...), whereby the defendants must give the commercial customers a binding undertaking to reimburse any fees and to bear any necessary packaging and transport costs as well as customs and storage costs associated with the return and to take back the products, whereby the plaintiff is to be provided with a sample of the recall letters as well as a list of the addressees with names and postal addresses or - at the defendants' discretion - a copy of all recall letters.

IV. The defendants are ordered to permanently remove from the distribution channels the products referred to in point I. which have been placed on the market since 29 October 2018.

V. The defendants are ordered to surrender to a bailiff to be appointed by the plaintiff for the purpose of destruction, at their - the defendants' - expense, the products referred to in point I.1. which are in their direct or indirect possession or ownership.

VI. The defendants are ordered to provide the plaintiff with information on
1. Origin and distribution channels of the infringing products or processes;

2. the quantities produced, manufactured, delivered, received or ordered and the prices paid for the products referred to in point I, and
3. the identity of all third parties involved in the manufacture or distribution of infringing products pursuant to Section I.
whereby copies of the corresponding purchase receipts (invoices, alternatively delivery notes) must be submitted as proof of the information and details requiring confidentiality outside the data subject to disclosure may be blacked out and the information must also be organised in a chronological list.

VII. The plaintiff is authorised to announce and publish the decision in whole or in part in public media, whereby the defendants are to reimburse the costs for a full-page publication (print) in five national daily newspapers and five specialist media, in each case at the plaintiff's discretion.

VIII. The defendants are ordered to pay a repeated penalty payment to the court of up to EUR 250,000.00 per day for each day of non-compliance by the defendants in the event of any violation of the Order pursuant to Section I.1 or Section I.2.

IX. The defendants are sentenced as joint and several debtors,

1. to compensate the plaintiff for any further damage that it has suffered or will suffer in the future for all past damage pursuant to Section I. since 29 October 2018, whereby the amount of the damage is to be determined in subordinate proceedings;
2. to pay the plaintiff EUR 50,000.00 as provisional liquidated damages.

X. Orders the defendants to pay the costs.

XI. The judgement is provisionally enforceable against the provision of security, which can also be provided in the form of a bank or savings bank guarantee. The individual parts of the judgement may be enforced individually against the provision of security in the amount of a partial amount of the total security to be determined by the court.

The defendants claim,

1. The action is dismissed.

2. Orders the applicant to pay the costs. in the

alternative:

1. The defendants are granted a use and conversion period of 6 months from the date of delivery of the judgement, during which they are entitled to continue to manufacture and offer the attacked embodiment in the Federal Republic of Germany.

and/or to place on the market, use or import or possess for the aforementioned purposes.

2. Enforcement of the decision is subject to the provision of security by the plaintiff in the amount of at least [redacted] , whereby the security can be provided in the form of a bank guarantee.

3. Ordered that the information be provided only to an auditor to be designated by the plaintiff, who is also bound to secrecy vis-à-vis the plaintiff.

4. It is ordered that the data and information to be communicated in the context of the provision of information is confidential information that must be treated as strictly confidential and may not be used or disclosed outside the present legal dispute, even after its conclusion. The plaintiff may only make the specified information accessible to such representatives and internally only to such employees who have a legitimate interest in it. Internal access is to be limited to a maximum of three reliable persons who are to be named to the court and the defendants. Any further access to the designated information must be declared unauthorised.

The defendants counterclaim,

1. The European patent EP 1 612 910 is declared invalid in its entirety.

2. Orders the applicant to pay the costs.

The plaintiff filed a counterclaim,

1. The actions for annulment are dismissed.

2. Orders the defendants to pay the costs.

3. Auxiliary request 0a:
Pursuant to Rule 30 RoP, it is requested in the alternative that the European patent EP 1 612 910 be maintained to a limited extent on the basis of the set of claims 1 to 4 according to auxiliary request 0a, the description as granted and the figures as granted, filed with the defence to the action for revocation.

4. Auxiliary request 1:
Pursuant to Rule 30 RoP, it is requested in the alternative that the European patent EP 1 612 910 be maintained to a limited extent on the basis of the set of claims 1 to 2 according to auxiliary request 1, the description as granted and the figures as granted, filed with the defence to the action for revocation.

5. Auxiliary request 1bis :
Pursuant to Rule 30 RoP, it is requested in the alternative that the European patent EP 1 612 910 be maintained to a limited extent on the basis of the set of patent claims 1 to 2 submitted with the defence to the action for revocation pursuant to auxiliary request 1, the description as granted and the figures as granted, with the proviso that secondary claim 2 is deleted.

6. Auxiliary request 1a:
Pursuant to Rule 30 RoP, it is requested in the alternative that the European patent EP 1 612 910 be maintained to a limited extent on the basis of the set of patent claims 1 to 2 submitted with the defence to the revocation counterclaim pursuant to auxiliary request 1a, the description as granted and the figures as granted.

7. Auxiliary request 2:
Pursuant to Rule 30 RoP, it is requested in the alternative that the European patent EP 1 612 910 be maintained to a limited extent on the basis of the set of claims 1 to 4 according to auxiliary request 2, the description as granted and the figures as granted, filed with the defence to the action for revocation.

8. Auxiliary request 2a:
Pursuant to Rule 30 RoP, it is requested in the alternative that the European patent EP 1 612 910 be maintained to a limited extent on the basis of the set of claims 1 to 4 according to auxiliary request 2a, the description as granted and the figures as granted, filed with the defence to the action for revocation.

9. Auxiliary request 3:
Pursuant to Rule 30 RoP, it is requested in the alternative that the European patent EP 1 612 910 be maintained to a limited extent on the basis of the set of patent claims 1 to 2 submitted with the defence to the revocation counterclaim pursuant to auxiliary request 3, the description as granted and the figures as granted.

10. Auxiliary request 3a:
Pursuant to Rule 30 RoP, it is requested in the alternative that the European patent EP 1 612 910 be maintained to a limited extent on the basis of the set of patent claims 1 to 2 submitted with the defence to the revocation counterclaim pursuant to auxiliary request 3a, the description as granted and the figures as granted.

With regard to any further applications in the written procedure and in the interim proceedings, reference is made to the documents of the parties.

KEY PROCESS STEPS

To prove that the representation by Mr is effective under the relevant legal systems - Singapore and California - the plaintiff submitted a legal opinion by the lawyer , who is admitted to practice in California, and a legal opinion by the lawyer , who is admitted to practice in Singapore. On 15 April 2024, the defendants requested the submission of the power of attorney documents referred to in the expert opinions submitted by the plaintiff, according to which Avago Technologies General IP (Singapore) Pte. Ltd. had granted several persons the authority to act on its behalf with regard to certain legal transactions and according to which the authorised several persons to act on her behalf with regard to certain legal transactions. The plaintiff complied with this application at the interim hearing without a court Order. On 15 May 2024, the defendants then applied for the submission of the resolutionsof the Board of Directors of Avago Technologies General IP (Singapore) Pte. Ltd. and .The judge-rapporteur granted this application in part by Order dated 5 June 2024 (ORD_28831/2024 in App 27608/2024). The applicant complied with this Order and submitted Annexes EIP 13 to 15, which were subject to a confidentiality order by the judge-rapporteur as requested.

By Order dated 23 April 2024, the Chamber decided to hear the infringement claim and the counterclaim together.

FACTUAL AND LEGAL DISPUTES BETWEEN THE PARTIES

The plaintiff claims to be the registered proprietor of the patent in suit. According to Rule 8 No. 5 (c) RoP, the status in the national register establishes a presumption of substantive ownership of the national part that is asserted. The defendants had not rebutted this presumption. German law was not applicable to the question of effective representation. Singapore law applies with regard to Avago Technologies General IP (Singapore) Pte. Ltd. and Californian law for the Application. § Section 181 of the German Civil Code (BGB) does not preclude representation because there are no comparable restrictions on representation in the relevant legal systems. It refers to legal opinions in Annexes EIP 9 and 10.

The defendants criticise the plaintiff's legitimacy and claim that the plaintiff is not the owner of the patent in suit. The formal entry in the register is not sufficient. The signing of the agreement for both parties by one and the same person - in this case Mr (see Annex B 1) - constitutes an inadmissible self-dealing. There were no indications that Mr would have been authorised to enter into such an insider transaction. Due to the lack of presentation of a complete chain of authorisation, the authorisation of Mr is unclear and the plaintiffs' legitimation to act is therefore inconclusive.

The plaintiff sees an infringement of the patent in suit in the configuration of the power supply of the "AMD Ryzen" processor installed in the Tesla Model Y via an MP 2858 chip and a total of five MP NM 8694 chips, which are arranged and connected together with the "AMD Ryzen" processor on a common circuit board of the Tesla computer. The defendants deny infringement of the patent in suit.

The defendants are of the opinion that the allegedly function-oriented interpretation required for the plaintiff's infringement sub-sumption leads to a legally inadmissible dissolution of the device features constituting the meaning of the independent claim 1.

The defendants claim that the patent in suit is not legally valid and that it must be cancelled in its entirety in response to the action for revocation brought by them. With regard to the revocation counterclaim, the defendants refer to the pre-published documents D 1 to D 6 as prior art, none of which, with the exception of D 6, were the subject of the grant procedure.

They also argue that the injunction requested is disproportionate in the present case. The defendants' vehicles are an extremely complex overall product, which the plaintiff wishes to remove from the market with its attack on a functionality that is completely subordinate in view of the overall product. In any case, however, the defendants should be granted a period of time for use and conversion in view of the complexity and the time required for a possible redesign.

To avoid repetition, reference is also made to the parties' documents and annexes.

REASONS FOR THE DECISION

The admissible action is unfounded. The action for annulment is admissible and partially justified.

A.

The action and the action for annulment are admissible. The jurisdiction of the local division seised is rightly not in dispute between the parties. The plaintiff is authorised to assert the disputed claims arising from the patent in suit.

I.

The plaintiff can successfully rely on its registration as proprietor of the patent in suit. 1.

In principle, the active legitimacy for the assertion of annex claims from European patents is based on the substantive entitlement (see BGH, judgement of 7 May 2013 - X ZR 69/11, GRUR 2013, 713, para. 57 et seq. - milling process). Thus, the irrefutable fiction of the applicant's entitlement arising from Art. 60(3) EPC and Sec. 7 PatG (see Benkard EPÜ/Melullis, 3rd ed. 2019, EPC Art. 60 para. 38) does not apply to the infringement proceedings; its scope of application is limited to the registration proceedings themselves. The entry in the patent register offers no guarantee that its content is correct, as the register has neither a positive publicity effect like the land register nor a negative publicity effect like the commercial register. However, entries in a public register kept by an administrative authority convey a presumption of correctness and thus a considerable legal appearance (BeckOK PatR/Otten- Dünnweber, 13th ed. 25 July 2019, PatG Section 30 para. 12). The entry in the patent register therefore has a significant indicative effect when assessing the question of who is the substantive owner of the patent (BGH, judgement of 7 May 2013 - X ZR 69/11, GRUR 2013, 713, para. 59 - Fräsverfahren).

2.

Nothing else applies on the basis of the UPCA. According to Rule 8.5 RoP, the following applies

> (a) [...] in respect of the proprietor of the European patent, the person who, under the law of the Member State for which the European patent has been granted, is entitled to be registered as proprietor of the patent, irrespective of whether that person is actually registered in the patent register of that Member State (hereinafter referred to as the "national patent register"); and
>
> (b)[..]
>
> (c) For the purposes of paragraph 5, there shall be a rebuttable presumption that the person identified in the relevant national patent register and in the European Patent Register maintained by the European Patent Office is entitled to be registered as proprietor or as applicant, as the case may be.

The Board must therefore proceed on the basis of a rebuttable presumption. The UPC Court of Appeal has already taken the same approach for patents with unitary effect and assumed that, due to its corresponding entry in the Register for Unitary Patent Protection, this person is to be treated as the proprietor of the dispositive patent, Rule 8.4 RoP. As such, it was entitled to request the ordering of corresponding measures, Art. 47(1) UPCA (UPC_CoA 335/2023, Order of 26 February 2024, p. 24).

3.

Insofar as the defendants argue that the plaintiff did not become the owner of the patent in suit due to an inadmissible "in itself" transaction, this objection is not capable of shaking the legal presumption.

a)

Articles 71-74 EPC contain formal requirements with regard to the transfer of rights. According to Art. 71 EPC, the European patent application can be transferred or be the subject of rights for one or more of the designated contracting states. This includes the transfer or encumbrance of the right to the grant of the patent. The special provision of Art. 72 EPC applies to the transfer by legal transaction (Benkard/Grabinski, EPC, 3rd ed., EPC Art. 71 para. 4). According to this provision, the transfer of the European patent application by legal transaction must be made in writing and requires the signature of the contracting parties. Accordingly, the written form prescribed by Art. 72 EPC is complied with if both contracting parties sign the declaration intended to effect the transfer in a single document. It is necessary that the identity of the contracting parties is evident from the document (Benkard/Grabinski, EPC Art. 72 para. 4). The EPC does not contain any further conditions for validity (Hans. Higher Regional Court of Hamburg, judgment of 19 September 2019 - 3 U 181/17, GRUR-RR 2020, 294 para. 35 f. - Packaging for smoking products).

b)

Contrary to the defendant's view, these requirements are therefore met in the case in dispute. The transfer of the patent in suit was made in writing and the identity of the contracting parties is clear from the documents submitted. Insofar as the defendants claim that the agreement was signed for both parties by one and the same person [redacted] (see Annex B 1) - as an inadmissible self-dealing transaction, the plaintiff rightly argued that German law does not apply to the question of effective representation.

is applicable. Rather, Singapore law (Avago Technologies General IP (Singapore) Pte. Ltd.) or Californian law is to be applied in this respect with regard to the respective company headq[redacted] . The plaintiff has argued that a provision comparable to Section 181 of the German Civil Code (BGB) would not preclude representation because there are no comparable restrictions on representation in the relevant legal systems. The defendants have not disputed the content of the legal opinions submitted by the plaintiff in this respect in Annexes EIP 9 and 10.

Insofar as the defendants subsequently disputed the chain of representation as such, the plaintiff submitted the resolutions of the respective boards of directors in accordance with the judge-rapporteur's Order of 5 June 2024 (ORD_28831/2024 in App 27608/2024). These resolutions do not give rise to any justified doubts as to the legitimisation of the claim. In addition, the plaintiff can rightly claim that the transfer of rights within a group is at issue and not a transfer in favour of an uninvolved third party.

II.

There are no concerns regarding the admissibility of the counterclaim. In particular, the UPC also has international jurisdiction. Pursuant to Article 32(1)(e) UPCA, the UPC has exclusive jurisdiction for counterclaims for revocation of (European) patents. Since there is currently no opt-out (Art. 83 (3) UPCA) from the exclusive jurisdiction of the court in relation to the patent in dispute in force, the UPC - as the common court of the member states of the UPCA - has international jurisdiction for the present counterclaim pursuant to Art. 24 (4), 71a (2) (a), 71b (1) of Regulation (EU) No. 1215/2012. III.

The applicant's applications for alternative amendment of the patent in suit pursuant to R. 30 RoP are also admissible and, in particular, were filed in due time.

1.

The applicant had included the amendments in its defence to the revocation counterclaim, but without at the same time using the corresponding workflow provided by the UPC's Case Management System (CMS). The defendants argue that the applicant's application to amend the patent in suit is inadmissible because, according to Rule 4.1 RoP, the parties must use the official forms available online. As far as can be seen, the plaintiff did not open a workflow with an application under Rule 30.1 RoP until 4 March 2024, triggered by a bilateral contact between the local division and the plaintiff immediately following the opening of a CMS ticket by the defendants on 23 February 2024. This subsequent application was late.

The plaintiff is of the opinion that the defendant's objection regarding the current auxiliary request 1 cannot apply because its content was already the subject of subclaim 2. In addition, it, the plaintiff, had also filed the auxiliary requests on 4 March 2024 via the correct workflow following the defence to the nullity counterclaims.

2.

The plaintiff's amendments are admissible and, in particular, were submitted in due time.

a)

According to Rule 30.1 RoP, the defence to the counterclaim for a declaration of invalidity may contain an application by the patent proprietor to amend the patent, which must comply with certain substantive requirements under lit (a) and (b). Pursuant to Rule 4.1 RoP, documents and other papers must be signed and filed with the Registry or the relevant Registry extension in electronic form. The parties are required to use the official forms available online.

b)

Only the rule in R. 30.1 RoP in conjunction with R. 29 lit (a) RoP is relevant for determining the time limit, according to which an application for amendment of the patent must be filed within the time limit for the defence to the counterclaim for a declaration of invalidity and this defence must be filed within 2 months of service of the counterclaim for invalidity in accordance with Rule 29 lit (a) RoP. The plaintiff has complied with this time limit. It is true that the parties are obliged under general Rule 4.1 RoP to submit documents in electronic form. However, the use of the available forms is only an obligation, as Rule 4.1 sentence 2 RoP is only a mandatory provision ("are required"). At least in the initial phase of the UPC - the present action was filed on the first day of the UPC's operation, 1 June 2023 - the local division considers it appropriate to apply a more generous standard. It should be borne in mind that the workflow-based coding of the CMS poses challenges for all parties involved. An overly strict approach would be unacceptable at the present time in view of the principles of due process, as nowhere in the RoP does it expressly order the exclusion of applications for which the special workflows provided in the CMS have not been used. In the present case, when the defendant's representatives asked where they should submit the defence to the request for amendment, it became apparent that the plaintiff had not used the existing workflow. She then made up for this. There is no need to decide whether and from what point in time the UPC started work stricter standards should be applied in this respect.

c)

Since auxiliary claim 1 reproduces sub-claim 2, there was no room for delay anyway, as the latter had already been the subject of the application before.

d)

The local division can leave open whether the last auxiliary request 1^{bis} submitted by the plaintiff is admissible or at least admissible.

aa)

The applicant only made this application at the oral hearing after the chairperson had announced that the panel "would close the oral hearing" and had explained the modalities of the announcement of a decision.

The RoP of the UPC does not contain any regulation on the question of when an oral hearing is closed and what consequences are associated with this, in particular how applications that may only have been submitted after the end of the oral hearing are to be dealt with. Ultimately, a decision in the case in dispute is irrelevant. This is because the applicant had already stated in the defence to the action for annulment when filing the auxiliary requests that all auxiliary requests constituted conditional applications within the meaning of Rule 30.1(c)(1) RoP, which were made on the condition that the version granted (main request) was not amended.

should not be considered legally valid. The order of priority of the applications is as follows: Main claim, auxiliary claim 0a, auxiliary claim 1, auxiliary claim 1a, auxiliary claim 2, auxiliary claim 2a, auxiliary claim 3, auxiliary claim 3a. The individual claims (i.e. also each dependent claim separately) of the sets of claims according to the main claim and auxiliary claims are also defended individually or in isolation; in this respect, they are not closed sets of claims.

bb)

Against this background, it is already possible on the basis of auxiliary request 1 to maintain the patent in suit in claim 1 in the version of auxiliary request 1 by deleting claim 3, as is the counter-motion of auxiliary request 1^{bis} . In view of the plaintiff's above explanation, such an application was already part of the announced auxiliary requests when the auxiliary requests were filed, if interpreted appropriately, so that a defence against this application was already possible for the defendants in the written procedure and there is no case of R. 263.2 lit (a) or (b) RoP. The auxiliary request understood in this way also contains a substantively admissible restriction with regard to the relationship to claim 1 (see C. VIII. below). The time at which the auxiliary request 1^{bis} was filed - during or after the oral hearing - is therefore irrelevant.

B.

The patent in suit - and the auxiliary requests introduced in the plaintiff's defence to the action for revocation - must first be interpreted.

I.

The patent in suit generally relates to the control of the power supply of electronic circuits and their modules. This includes the supply of power to the components and modules involved and, in particular, their power control. Different modules, integrated circuits or the like of electrical systems may have different requirements for their power supply and the corresponding power supply sources. These requirements are also influenced by circumstances such as the operating environment and the operating mode, so that the power supply requirements can vary over time and over different positions on a printed circuit board of the electronic circuit (para. [0001], [0002] of the patent in suit, hereinafter "KPS"). Electrical circuits or their modules therefore sometimes do not have the required power supply in terms of quantity and quality, even though the power supply circuit as a power source had originally provided output power with the required characteristics (para. [0003] KPS).

Based on this, systems with a regulated output of electrical current by a power supply unit are known in the prior art, for example in such a way that a certain voltage is output within tolerance limits. The patent in suit explains in paragraph [0003] that electronic systems with various components can utilise a power supply with regulated current or power output. Due to different positions of the various components on the circuit board, the characteristic of an electrical power output from a power supply source may differ from the characteristic of an electrical power received by an electronic circuit.

II.

The patent in suit does not specify a problem to be solved. Against the technical background described in the patent in suit, the underlying technical problem is to improve the power supply of electronic systems or circuits. To this end, the patent in suit, as granted, proposes in independent claims 1 and 3, together with dependent claims 2 and 4, a system and a method for controlling the power of various devices and circuits within a power supply system. Claim 1 describes the system and claim 3 describes the corresponding method.

Claim 1 of the patent in suit, as granted in German translation, protects a power control system which can be organised as follows:

1. Power control system (600) with:

1.1 a first electrical device (610) which receives electrical current (611),

1.2 a second electrical device (615) which receives electrical current (616),

1.3 a power supply circuit (540) which supplies the electric current to the first and second devices (610, 615),

1.4 an integrated circuit (620), wherein the integrated circuit comprises a first module (622) and a second module (624),

1.4.1 wherein the first module is adapted to monitor at least one characteristic of the current (611) received from the first electrical device (610) and at least one characteristic of the electrical current (616) received from the second electrical device (615),

1.4.2 wherein the second module is adapted to communicate with a third electrical device (630) regarding the at least one characteristic of the electrical current monitored by the first module (622),

1.5 wherein the third electrical device (630) is adapted to receive information regarding the at least one monitored performance characteristic of the first and second electrical devices from the second module (624), characterised in that

1.6 the third electrical device is adapted to process the received information to determine a current adjustment command and communicate the command to the power supply circuit (640).

According to the patent specification, the content of claim 1 is shown schematically in Fig. 6 of the patent in suit:

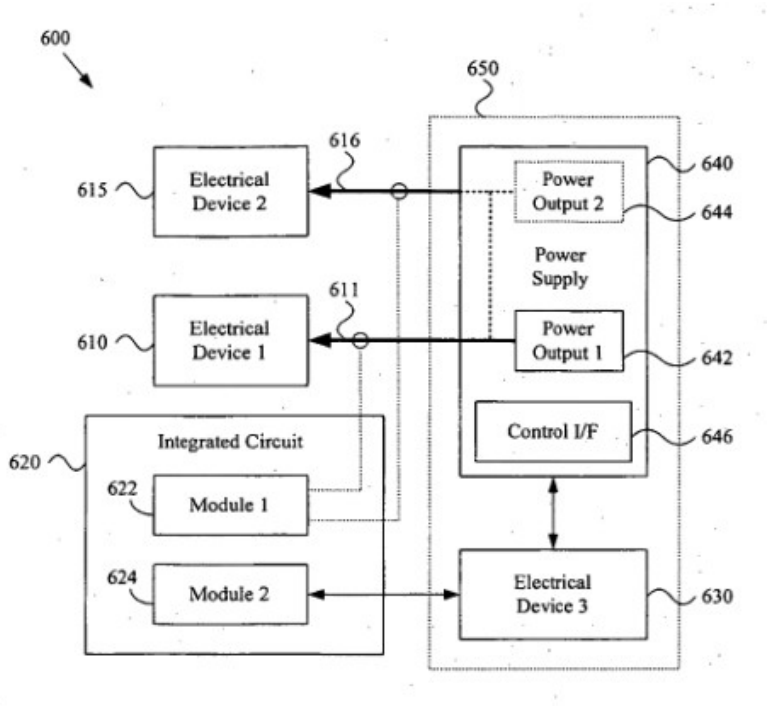

Figure 6

Claim 3 of the patent in suit, as granted in German translation, protects a method of power control which can be organised as follows:

3. A method (800) of controlling power comprising the following steps:

3.1 Monitoring (820) at least one characteristic of electrical current received from a first electrical device,

3.2 Monitoring (830) at least one characteristic of electrical current received from a second electrical device,

3.3 Determining power control information from an analysis of electrical power characteristics monitored in steps 820 and 830, characterised in that

3.4 the step of obtaining power control information comprises obtaining a power adjustment command that can be interpreted and processed by a power supply circuit receiving the command, and characterised by

3.5 Communicating the power control information to the power supply circuit that supplies the electrical current to the first and second electrical devices.

III.

Claims 1 and 3 of the patent in suit as granted and the relevant auxiliary requests require interpretation with regard to certain features.

1.

According to the case law of the UPC Court of Appeal, the following principles must be assumed in accordance with Art. 69 of the Convention on the Grant of European Patents (EPC) and the Protocol on its Interpretation (Interpretation Protocol) (UPC_CoA 335/2023, Order of 26 February 2024, GRUR-RS 2024, 2829 - NanoString/10x Genomics (detection method), p. 26/27):

> "The patent claim is not only the starting point, but the decisive basis for determining the scope of protection of a European patent. The interpretation of a patent claim does not depend solely on its exact wording in the linguistic sense (see also the English and French language versions of the interpretation protocol: "the strict, literal meaning of the wording used in the claims", "sens étroitet littéral du texte des revendications"). Rather, the description and the drawings must always be used as explanatory aids for the interpretation of the patent claim and not only to resolve any ambiguities in the patent claim. However, this does not mean that the patent claim merely serves as a guideline and that its subject matter also extends to what, after examination of the description and drawings, appears to be the patent proprietor's request for protection.
>
> The patent claim is to be interpreted from the perspective of the person skilled in the art.
>
> When applying these principles, appropriate protection for the patent proprietor should be combined with sufficient legal certainty for third parties.
>
> These principles for the interpretation of a patent claim apply equally to the assessment of infringement and the legal validity of a European patent. This follows from the function of the patent claims, which under the European Patent Convention serve to define the scope of protection of the patent under Art. 69 EPC and thus the rights of the patent proprietor in the designated Contracting States under Art. 64 EPC, taking into account the conditions for patentability under Art. 52 to 57 EPC (see EPO GBK, 11 December 1989, G 2/88, OJ 1990, 93 para. 2.5)."

2.

In view of the fact that, in particular, patent claim 3 is not limited to semiconductor chips, the person skilled in the art is to be defined as a graduate engineer specialising in electrical engineering with a university degree and several years of experience in the development of power control systems.

3.

In particular, the interpretation of features 1.3 [Power Supply Circuit] and 1.4 [Integrated Circuit] as well as 1.5 and 1.6 [Third Electrical Device], which are in dispute between the parties, requires special consideration.

a)

Together with the plaintiff, the local division assumes a functional interpretation of the patent in suit. In feature 1.3, the patent-in-suit does not mention any special technical features in relation to the term "device" and therefore does not require t h a t it be a circuit as distinct from several independent and merely interacting circuits. This can already be inferred from the wording of the feature

which provides only a power supply circuit (540) that supplies the electric current to the first and second devices (610, 615).

Contrary to the defendant's view, the assumption that the power supply circuit according to feature 1.3 must be a single circuit can neither be inferred from the description of the teaching according to the invention nor derived from technical and functional considerations.

Para. [127] of the statement of claim states, inter alia:

> [0127] [...] The exemplary power supply circuit 640 may comprise a first power output module 642 that outputs electrical power to the first electrical device 610. The exemplary power supply circuit 640 may also, for example, comprise a second power output module 644 that outputs electrical power to the second electrical device 615. Note that the second power output from the power supply circuit 640 may, for example, be output from the second power output module 644 or may (as indicated by the dashed line) be output from the first power output module 642. Accordingly, the second power output from the power supply circuit 640 may be related to the first power output or may be independent.

This becomes even clearer in paragraph [129]:

> [0129] The power supply circuit 640 may comprise any of a large variety of power supply circuit characteristics. For example, the power supply circuit 640 may be an independent power supply integrated circuit. The power supply circuit 640 may, for example, comprise discrete active and passive electrical components. The power supply circuit 640 may, for example, comprise one or more linear or non-linear regulators. The power supply circuit 640 may, for example, comprise analogue, digital or hybrid circuitry. The power supply circuit 640 may, for example, comprise one or more independently controllable outputs.

It can thus be inferred from the patent specification that an exemplary power supply circuit can have several outputs or output modules. These can be related or independent of each other. The power supply circuit may be an independent integrated power supply circuit and may comprise, for example, discrete active and passive electrical components. It may also include one or more linear or non-linear regulators and may also include analogue, digital or hybrid circuits. It may, for example, include one or more independently controllable outputs. The power supply circuit can therefore consist of several modules whose outputs are independent. From the point of view of the person skilled in the art, this is also typical for the function of high-performance printed circuit boards, namely that they have one or more power supply circuits that control different areas of a chip differently.

b)

According to feature 1.4, the power control system according to the claim should have an integrated circuit (620), with a first module (622) and a second module (624). The one integrated circuit of feature group 1.4 thus has two modules:

(1) According to the patent, the first module is set up to monitor at least one characteristic of the current received by the first and second electrical devices. According to the patent, both the current received by the first device

received current, as well as the current received by the second device. The actual value of the current received by the electrical devices is thus monitored by the integrated circuit by means of the first module. With regard to the monitored property of the received current, the patent specification cites numerous examples, in particular properties of the electrical voltage, such as the relative or absolute voltage level ("relative level or absolute level"), relative level or absolute level)"), characteristics of the electrical current, such as the relative or absolute current level ("current level (e.g., relative level or absolute level)") or characteristics of the electrical power, such as the power level ("power level"; see paragraphs [0019], [0104] and [0130] of the patent application).

(2) A second module communicates with a third electrical device with regard to at least one characteristic of the current monitored by the first module (see below). This is the claimed way of adjusting possible deviations of the actual value from the setpoint value.

c)

A functional interpretation must also be followed with regard to the other features, with the result that there are also no spatial-physical requirements with regard to features 1.5 and 1.6:

1.5 wherein the third electrical device (630) is adapted to receive information regarding the at least one monitored performance characteristic of the first and second electrical devices from the second module (624), characterised in that

1.6 the third electrical device is adapted to process the received information to determine a current adjustment command and communicate the command to the power supply circuit (640).

aa)

The patent in suit does not specify the position of the third electrical device. It can be located on the power supply circuit, but according to the claim it can generally also be located on another circuit. As already explained, the patent in suit does not mention any technical features with regard to the term "device" and is therefore to be understood functionally. It can be formed by hardware or software.

Thus, the descriptive passages in paragraphs [133 and 171] of the patent in suit show that the claim is not limited to a particular spatial order:

> [0133] As illustrated in Figure 6 with dashed line 650, the third electrical device 630 may be integrated with, or part of, the power supply circuit 640. Alternatively, the third electrical device 630 may be independent of the power supply circuit 640.
>
> [0171] [...] For example, various aspects of the present invention may be performed by modules integrated into a single integrated circuit or by a set of integrated circuits.

Contrary to the defendant's view, there is therefore no such distinction between the integrated circuit according to feature group 1.4 and the third electrical device according to features
1.5 and 1.6 that the third electrical device could not be - not even functionally - part of the integrated circuit according to feature 1.4. On the contrary, the description of Figure 6 in paragraph [133] of the patent in suit also shows that the third electrical device can also be independent of the power supply circuit and that the third electrical device cannot be a functional part of the integrated circuit.

can be arranged both inside the integrated circuit 620 and outside the integrated circuit 620. Thus, the third electrical device can be arranged at any position, including inside the integrated circuit. Nothing in the patent in suit indicates that - and why - the third device, which communicates with the second module (whereby this second module could also be merely a line, cf. para. [0112] KPS), could not also be part of the integrated circuit within which the first and second modules are located.

bb)

Furthermore, the patent in suit makes no reference to the method of processing according to feature
1.6 no specifications (par. [0135] KPS). According to the purpose of this process, the power supply circuit can then modify certain aspects of the electrical power provided or adapt the power supply to the needs of the circuits, if necessary (par. [0134] KPS). For example, the power supply needs of the first and second electrical devices need not necessarily be equally considered. The third electrical device may also prioritise the first or second device for power supply and adaptation (para [0137] KPS). It is not apparent that the communication according to the claim, because it requires two communication partners, namely the second module on the one hand and the power supply circuit on the other hand, would make specifications beyond the functionality. This is because the patent in suit discloses, as mentioned, that module 2 can simply be a line (cf. para. [0112] "*In a second exemplary scenario, the second module 524 may comprise a mere conduit (e.g., a wire or optical path) for information obtained by the first module 522*.").

cc) In the case in dispute, it does not matter under what conditions and to what extent the grant history is relevant for the interpretation of the claim before the UPC. In any event, the deletion of the sentence cited by the defendants:

> "*Accordingly, the scope of various aspects of the present invention should not be limited by characteristics of a particular location or level of integration for the electrical device 630*",

that the opposite of the deleted sentence now applies with regard to the interpretation of the patent claim. The fact that the embodiment according to Figure 1 has such an integration, but Figure 6 does not, is not capable of limiting the claim. For even if Figure 1 as such no longer belongs to the claimed part, this does not mean that the core content of the invention is limited to the one embodiment according to Figure 6, in particular if the descriptive passages expressly describe the positioning as variable, especially in relation to Figure 6 (see [0133]).

d)

The interpretation of auxiliary request 0a

> *to request the power supply circuit (640) to modify the supplied electric current. (EP 1 612 910 B1, claim 1 according to auxiliary request 0a, direct infringement);*

is rightly not in dispute between the parties. e)

The auxiliary request 1

wherein the third electrical device is adapted to mediate between the first and second electrical devices, the mediation taking into account the power supply requirements and/or priorities of the first and second electrical devices (EP 1 612 910, claim 1 according to auxiliary request 1, direct infringement) [formerly claim 2]

additionally has the features of dependent claim 2 as granted. Auxiliary

claims 1a and 2 read as follows:

the third electrical device is further adapted to request the power supply circuit (640) to modify the supplied electrical current (EP 1 612 910, claim 1 according to auxiliary request 1a, direct infringement)

wherein the first electrical device (610) is a microprocessor circuit and wherein the second electrical device (615) is a memory circuit (EP 1 612 910, claim 1 according to auxiliary request 2, direct infringement).

The required functional interpretation must take into account how the function of the elements referred to is described in paragraph [0135 ff] of the patent in suit. Accordingly, a wide variety is described with regard to the processing of the information. The mediation may consist of determining the power demand of the highest priority module or on a demand-based weighted average; the mediation may also be equivalent. Auxiliary claims 1 and 1a disclose that the third electrical device may process the received current-related information to then take into account the power supply needs and/or priorities of the other two electrical devices with a view to adjusting the current (para [0136], [0164] KPS). For example, the third electrical device may determine that the power supply requirement of the first electrical device outweighs the power supply requirement of the second electrical device and communicate corresponding power supply control information to the power supply circuit based thereon (par. [0137], [0139] KPS). According to the claim, it must be the third claimed electrical device that performs the switching.

f)

The auxiliary application 1^{bis} is identical to the auxiliary application 1 with the proviso that the secondary application 2 (= the granted procedural claim 3) is deleted, thus taking into account a possibly non-existent legal existence of the granted procedural claim 3.

4.

With regard to the features of independent claim 3, reference can be made to the above, whereby, in contrast to claim 1, claim 3 as granted does not provide for an integrated circuit with receiving and transmitting module nor a third device which processes the received information in order to determine and communicate a current adjustment command.

C.

The patent in suit as granted lacks legal validity in both claim 1 and claim 3. It is true that there is no impermissible extension (see C. I. below). In the functional interpretation of the features of the patent in suit advocated by the plaintiff and followed by the local division, citation D1 proves to be

anticipation of all features of the granted claim 1 and the granted claim 3 which is prejudicial to novelty (see C. II. below). However, the patent in suit is legally valid with regard to claim 1 in the version of auxiliary request 1 with deletion of claim 3 (see C. II. 4. below). The legal validity of claim 3 in the version of the auxiliary requests asserted is opposed by document D 4 (see C. V. below). However, the patent-in-suit should not be completely cancelled in view of the lack of legal validity of claim 3 (see C. VIII below).

I.

Contrary to the defendant's view, features 1.6 and 3.4 of the patent in suit are sufficiently disclosed in terms of origin.

The disclosure in paragraph [0138] of the original application (UA) that the third device determines a *power adjustment command* and communicates it to the power supply circuit means nothing other than determining and communicating a *power adjustment request*. Even in the cited descriptive passage, request (or command) is obviously used synonymously. A "request" is technically a "command".

Contrary to the defendant's view, feature 1.6 is also not based on an inadmissible intermediate generalisation. It is obvious to a person skilled in the art that the
1.6 communicated to the power supply circuit does not remain inconsequential in the technical teaching according to the invention, but is used in a suitable manner by the power supply circuit to make an adjustment.

Nothing else applies with regard to feature 3.4. Also with regard to the description cited by the defendants, which the applicant cited as the basis for disclosure in the application procedure (cf. para.
"request" and "command" are synonyms. This *power supply request* or *command* is to be interpreted and processed by the power supply circuit, which means nothing other than the implementation of a power adjustment command.

II.

Publication D 1 (WO 02/093340 A1) "Tang" proves to be prejudicial to novelty overall in view of the legal status of the patent in suit as granted. D 1 relates to a system for supplying electrical power to a microelectronic device.

1.

Publication WO 02/093340 A1 (D 1) relates to microelectronic power regulation systems and components, in particular a stepped power regulation system and various components thereof, configured to provide operating power and voltage spike suppression power to a microelectronic device. Microelectronic power regulation systems generally include a power regulator configured to provide a desired regulated power to a microelectronic device such as microprocessors, microcontrollers, memory devices and the like (*see D1, p. 1, lines 6 - 14*). D1 discloses devices and methods for supplying a microelectronic device with operating current and for regulating or filtering transient power events. It presents a

performance regulation system that is capable of recognising and reacting to temporary performance events (*see D 1, p. 3, lines 3 - 10*).

D 1 refers to such changes in power requirements as "transient power demands" or "transient events". However, as the speed and performance of microprocessors increases, the strength and frequency of fluctuations in power requirements increases and at the same time the devices operated react more sensitively to deteriorating power supply as a result of such changes (see D 1, p. 1 f., lines 29 ff.). If not adequately filtered or regulated, changing power requirements could lead to a spike or bounce and thus to the voltage level temporarily being below or above the required supply voltage of the microprocessor, which in turn leads to errors during operation (see D 1, p. 2, lines 3 ff.).

Figure 31 illustrates a power control system 3100 according to an exemplary embodiment. It is described on p. 29 from line 9 of D1 and shows a system comprising a microprocessor ("microprocessor" 3144) with separate sub-areas ("independent portions" or "spatial portions", cf. D 1, p. 29 lines 13 ff.), each of which is supplied with power via power regulators ("primary regulators" 3102-3108) (cf. D 1, p. 29, lines 13-15). The power regulators can be individually controlled via a controller ("digital controller", 3118), which is controlled via information that the controller receives from sense circuits ("sense circuits" 3[1]36 [sic], 3138) via a common signal connection. In particular, the sense circuits monitor the voltage level and changes in the flowing current in order to detect transient events at an early stage and ensure that the power supply is adjusted via the controller:

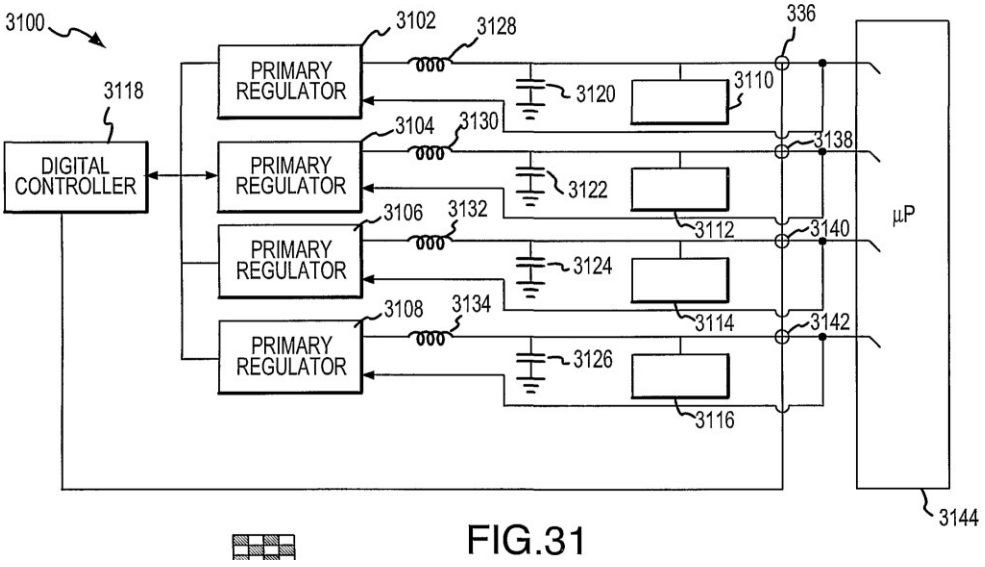

FIG.31

Figure 31 of publication D 1

The system 3100 is configured to provide independently controlled operating power to multiple locations on the microprocessor 3144 or other microelectronic device (lines 15 et seq.). Each primary controller 3102 - 3108 is configured to *be independently powered up or down*, depending on the

working conditions of a part of the microprocessor, instead of depending on the working conditions of the entire microprocessor (line 29).

2.

A power control system with all the features of granted claim 1 is known from publication D 1, which is therefore not patentable due to lack of novelty (Art. 54 EPC) (Art. 65(2) EPC, Art. 138(1)(a) EPC). The same applies to the granted method claim 3.

a)

The anticipation of features 1.1. to 1.3 of claim 1 of the patent in suit in D 1 is rightly not in dispute between the parties.

b)

Features 1.4, 1.4.1 and 1.4.2 (integrated circuit with two functional modules of power monitoring and communication) of claim 1 of the patent in suit are also anticipated in D 1 in a manner prejudicial to novelty. The device of Figure 31 is similar to that of Figure 1, except that it is configured to provide independent power control for different parts of the microprocessor ("*System 3100 is similar to system 100, except system 3100 is configured to supply independently controlled operating power to a plurality of locations on microprocessor 3144 or another microelectronic device"*, p. 29, line 13 of D 1). With regard to Figure 1, the D 1 does not use the term "integrated circuit", but the entire description of Figure 1 shows the integration of the modules in question here and thus an integrated circuit within the meaning of feature 1.4 (p. 6, lines 8 ff). Accordingly, Figure 1 of D 1 shows a power control system comprising primary power regulators 102-108, overvoltage suppression regulators 110-114 and a controller 116. The system 100 may also include one or more capacitors 118 and one or more inductors 120-126 connected to a load 128. The capacitors and inductors may comprise discrete components and/or symbolise an inherent inductance and capacitance in the system 100. Power control systems according to D 1 may include any number of primary regulators, transient suppression regulators, inductors and capacitors, and may further include additional components, such as resistors, transistors, additional capacitors and/or inductors, and the like.

In addition, p. 10, line 17 states that sensing circuits according to D 1 may be formed as part of the secondary controller 110, as discrete components, as part of a primary controller, or as an integral part of the microprocessor 128. In addition, one sensor circuit may be used to provide a signal to multiple controllers 110-114, or multiple sensor circuits may be used to provide multiple signals indicative of, for example, transient events occurring at different locations within the device 128 and/or power system 100. The same is true with respect to Figure 29, according to which the controller itself may also be integrated with the microprocessor ("*Although illustrated as a separate component, controller 2914 may suitably be integrated with any of microprocessor 2916, secondary regulators 2904-2912, or primary regulator 2902*").

Moreover, in the introductory description of the embodiments, it is pointed out that the teaching of D 1 not only includes various integrated components ("integrated compo-

nents"), but can also be used in any integrated circuit application (see p. 5, line 30 - p. 6, line 2).

c)

Features 1.4.1. and 1.4.2 are also disclosed as prejudicial to novelty. aa)

Regarding the functions of the "modules", with reference to Figure 31, it is stated (p. 30, lines 16 et seq.) that according to an exemplary embodiment, at least one sensing circuit 3136- 3142 comprises a di/dt sensing circuit configured to rapidly detect a transient event and send a corresponding signal to one or more transient suppression controllers 3110-3116 and optionally to controller 3118. Although illustrated with four sensing circuits, power control systems according to the present invention may include any desired number and any desired combination of configurations of sensing circuits. Thus, the arbitrary sensing circuits represent the first two modules of the integrated circuit that functionally fulfil the tasks of features 1.4.1 and 1.4.2. These modules monitor at least one characteristic of the current received by the first electrical device and at least one characteristic of the current received by the second electrical device. The second module communicates with the third device - the controller - in the form of the line; the patent in suit does not require any further function.

Insofar as it is stated in p. 30, lines 16 ff. of D 1 that the sense circuits (i.e. modules) transmit directly to the regulators, it is also disclosed that they can optionally also transmit this signal to the controller. Since the sense circuits send a signal, the person skilled in the art naturally reads a corresponding transmitter module. The fact that, according to paragraph [0112] of the patent in suit, a line can already correspond to a second module comes into play here.

bb)

Insofar as the plaintiff believes that the integrated circuit should expressly consist of various functional - but also spatially spaced - modules and not merely be limited to a "black box controller", this objection cannot be accepted in the required functional consideration, which the plaintiff has cited and which the court follows. There is no support for such a consideration in the patent specification. As already stated, the Court of Appeal has already confirmed that the principles for the interpretation of a European patent claim under Art. 69 EPC in conjunction with the Protocol on the Interpretation of Art. 69 EPC apply equally to the assessment of infringement and the legal validity of a European patent (see UPC Court of Appeal, GRUR-RS 2024, 2829 - NanoString/10x Genomics (detection method)). A divergent interpretation with regard to infringement on the one hand and the legal validity on the other is therefore inadmissible.

cc)

Contrary to the plaintiff's view, the disclosure content of D 1 is also not limited to the effect that the controller (3118) receives only a single signal which corresponds only to a sum or possibly an averaging of all individual current characteristics. Rather, D 1 also discloses the preservation of the individual signals. This is because the fact that the controller (3118 or 116) can send independent signals to the respective regulators is already the subject of D 1. On p. 30, lines 16 ff. it is disclosed in this respect that

any desired combination and configuration of sense circuits is part of the invention ("*Although illustrated with four sense circuits, power regulation systems in accordance with the present invention may include any desired number and any desired combination of configurations of sense circuits"*). This is particularly emphasised in the already quoted passage on
p. 10 line 17 ff. in the description of Figure 6 ("*Further, one sense circuit may be used to provide a signal to multiple regulators 110-114, or multiple sense circuits may be used to provide multiple signals indicative of, for example, transient events occurring at different locations within device 128 and/or power system 100*").

According to the teachings of D 1 , each *regulator* (3102-3108) may also *be independently powered up or down, depending on operating conditions of a portion of the microprocessor, rather than based on operating conditions of the entire microprocessor* (cf. p. 29, lines 28-30: "*each regulator 3102-3108 may be independently powered up or down, depending on operating conditions of a portion of the microprocessor, rather than based on operating conditions of the entire microprocessor*."). Thus, it is disclosed that and how the monitored individual characteristics of the currents for the individual spatial portions of the microprocessor 3144 are not lost in the D1.

d)

With the above, feature 1.5 [third electrical device] of claim 1 is also anticipated in a manner prejudicial to novelty, because the controller (3118) also functionally contains a third electrical device which receives the signal of the measuring circuits - and processes and further communicates it within the meaning of feature 1.6 (see below). Contrary to the plaintiff's opinion, this third device does not have to be located outside the controller. This is because the plaintiff itself - rightly - took the position within the infringement discussion that the third electrical device could be located on the power supply circuit, but could generally also be located on another circuit in accordance with the claim. This "also includes the integrated circuit according to the claim" and this is not contradicted by the schematic and exemplary embodiment according to Fig. 6 (Reply of the plaintiff, p. 30/31). As the plaintiff rightly points out, the patent in suit does not mention any special technical features in relation to the term "device". It is therefore to be understood functionally. A device according to the patent in suit can therefore be formed by hardware or software in accordance with the other provisions of the patent, without artificial limits being drawn (para. [0171] KPS). According to para [0171] KPS, the terms such as "electrical device" or "module" can be used interchangeably. According to the claim, the integrated circuit may comprise various modules ("*For example, various aspects of the present invention may be performed by modules integrated into a single integrated circuit or by a set of integrated circuits"*). However, feature 1.5 is thus also anticipated by D1 in a manner prejudicial to novelty.

e)

Finally, feature 1.6 of claim 1 also proves to anticipate novelty, according to which *the third electrical device is adapted to process the received information to determine a current adjustment command and to communicate the command to the power supply circuit (640)*.

On p. 31 of D 1 , it is disclosed that similar to control unit 116, control unit 3118 is generally configured to control one or more controllers 3102-3108. Further, the control unit 3118 may be configured to receive a signal from one or more of the controllers 3102-3108.

multiple sensing circuits 3136-3142 and sending a corresponding signal to one or more primary controllers 3102-3108 to cause one or more of the controllers to temporarily change an operating condition in response to the sensed transient event (see D 1, p. 31, lines 2-5). Controller 3118 may *further be configured to power up, power down, or alter operating parameters such as duty cycle and the like of one or more regulators 3102-3108 in response to a sensed operating conditions or other suitable signal (*cf. p. 31, lines 5- 8: "*Controller 3118 may be further configured to power up, power down, or alter operating parameters such as duty cycle and the like of one or more regulators 3102-3108 in response to a sensed operating conditions or other suitable signal.").*

Contrary to the applicant's view, reading the third electrical device into what it calls the "black box" controller does not contradict the required functional interpretation. On the contrary, two components in communication with each other, here the second module and the third electrical device, are disclosed in D 1 as functionally separate subunits of the controller 3118. This is because, according to the above-cited descriptive passages, it is disclosed not only that the regulators receive current information from the sampling circuits, but also that the digital controller with the third device issues a current adjustment command to the regulators in response to the current quality communicated by the sampling circuits. As can be seen from Figure 31, there is a direct communication link between the controller 3118 and the respective primary controller 3102- 3108 without any other intermediate components. To the extent that the plaintiff believes that D 1 does not disclose any communication-capable component, either in the controller 3118 or at any other point of the power control system 3100, which component could correspond to the third electrical device according to the claim, this is therefore precisely not the case. Rather, the function of the third electrical device is performed by the controller itself and not by the sensing circuits (first module) or the communication line (second module).

3.

With the help of the feature according to **auxiliary request 0a**

> *to request the power supply circuit (640) to modify the supplied electric current. (EP 1 612 910 B1, claim 1 according to auxiliary request 0a, direct infringement);*

the plaintiff is unable to distinguish claim 1 from D1. It is basically self-evident that the current adjustment command causes a modification of the supplied current. This feature is also apparent from the passage on p. 31 of D1 cited above. Accordingly, it is not only disclosed that the regulators receive (and possibly implement) current information (and possibly current commands) from the sampling circuits, but also that the digital controller with the third device issues a current adjustment command to the regulators in response to the current quality communicated by the sampling circuits, namely by up-regulation, down-regulation or by a change in operating parameters. The subject-matter of claim 1 according to auxiliary request 0a is thus also known from publication D 1 and therefore not patentable due to lack of novelty (Art. 54 EPC), Art. 65(2) EPC, Art. 138(1)(a) EPC.

4.

The characteristic according to **auxiliary request 1**

wherein the third electrical device is adapted to mediate between the first and second electrical devices, the mediation taking into account the power supply requirements and/or priorities of the first and second electrical devices (EP 1 612 910, claim 1 according to auxiliary request 1, direct infringement) ***[formerly claim 2]***

on the other hand, enables claim 1 to be successfully distinguished from D 1. This is because the solution that the third electrical device is designed to arbitrate between the first and second electrical devices, the arbitration taking into account the power supply requirements and/or the priorities of the first and second electrical devices, is not sufficiently disclosed in D 1.

a)

Admittedly, as stated, D1 discloses that the digital controller with the third device issues a current adjustment command to the regulators in response to the current quality communicated by the sampling circuits. Contrary to the defendants' view, however, the disclosed configuration does not at the same time disclose a prioritisation between different powered units or parts of the microprocessor, which in turn would be based on their power supply requirements. This is because the description passages cited by the defendants (p. 30, lines 2 et seq. and p. 29, lines 24 et seq.) disclose an individual power adjustment of individual areas of a microprocessor within the meaning of feature 1.6, but no *mediation* of the power allocation taking into account the power supply requirements and/or the priorities of the processor areas.

The third electrical device of the patent-in-suit is intended to determine, for example, that the power supply requirement of the first electrical device outweighs the power supply requirement of the second electrical device and to communicate corresponding power supply control information to the power supply circuit based on this (para. [0137], [0139] KPS). However, such switching and prioritisation do not result from the teaching of D 1. Rather, the essence of the invention of D 1 (and in particular the embodiment example according to Figure 31) is that purely *individual* power supplies are to be enabled according to the *individual* needs of parts of the microprocessor and precisely not taking into account the collective or the needs of neighbouring parts. This means that no prioritisation of power allocation as a result of switching or any switching at all is disclosed (p. 29. lines 13 ff. of D 1: "*System 3100 is similar to system 100, except system 3100 is configured to supply independently controlled operating power to a plurality of locations on microprocessor 3144 or another microelectronic device. In accordance with various aspects of this embodiment, each primary regulator 3102-3108 is configured to provide independently controlled power to an independent or isolated portion of microprocessor 3144").*

Thus, for the person skilled in the art, there is no indication in D1 to mediate between the parts of the microprocessor and to take into account the power supply requirements and/or the priorities of the parts of the microprocessor. On the contrary, the teaching of D1 leads away from such a solution, since the needs of the overall processor and thus also its other areas are not to be taken into account. There is also nothing disclosed that would suggest such an arrangement, even if it were not intended.

b)

This feature according to auxiliary request 1, which corresponds to the previous sub-claim 2, was also contained in the original disclosure (see WK 2, para. [140]).

5.

Claim 3 of the patent in suit, on the other hand, is also anticipated in its granted version to the detriment of novelty. The method claim according to the granted claim 3 is clearly broader and in particular dispenses with the teaching of a third device. In order to avoid repetition, reference can be made to the above comments on claim 1.

However, also with regard to claim 3, the feature according to auxiliary request 1 also enables a successful delimitation of claim 3 from D 1. It incorporates claim 4 and reads as follows:

> *wherein the step of determining power control information comprises determining information for mediating between the first and second electrical devices, wherein the mediating takes into account the power supply requirements and/or priorities of the first and second electrical devices.*

This is because the solution of arbitrating between the first and second electrical devices, whereby the arbitration takes into account the power supply requirements and/or the priorities of the first and second electrical devices, is, as explained, not sufficiently disclosed in D 1.

III.

Publication D 2 (WO 02/093340 A1) "*Ozawa*" does not conflict with the validity of the patent in suit.

D 2 describes a system for supplying various modules with an electrical voltage. It relates to a semiconductor device in which a voltage monitoring circuit monitors a voltage output from a voltage reduction regulator provided in a semiconductor integrated circuit (see para. [0003]). In contrast to feature 1.4.1 of the patent in suit, which requires monitoring of characteristics of the currents received by the two electrical devices, the analogue-to-digital converter disclosed by D 2 is not capable of monitoring a physical quantity, in this case voltage. There is no disclosure in the D 2 that at least one characteristic of the respective received current is monitored individually for each of the two selected modules 40 via the single signal path between the analogue-to-digital converter 30 and the voltage monitoring circuit 10. Moreover, the D 2 does not disclose any individual monitoring of the currents, but, as the applicant correctly states, only summarised. The individual characteristics of the voltages supplied to the two selected modules 40 are therefore lost according to this teaching. It is true that the aim of "monitoring" in D 2 is also to generate a current adjustment command. However, this is done in a different way in D 2, namely in the form of a static adjustment according to previously defined values (see paragraph [0037] of D 2).

IV.

Publication D 3 (US 2002/0118001 A1) "*Duffy*" also does not conflict with the validity of the patent in suit.

Publication US 2002/0118001 A1 (D 3) relates to power regulation systems, in particular a high phase power regulation system and in particular an improved control system for high phase power regulation systems (see para [0003]). It discloses a multiphase power supply system with improved control mechanisms for multiple outputs by a single control unit. It already appears doubtful whether the controller disclosed in D 3 is intended to constitute an integrated circuit. In any case, it must be assumed with the applicant that the controller 102 is only in communication on the output side via the digital bus 101 with the power ICs 306 and thus with the power supply circuit according to feature 1.3 and not with the third electrical device according to features 1.4.2, 1.5 and 1.6. Likewise, it cannot be inferred from D 3 that a third electrical device, within the meaning of feature 1.5, receives information with regard to the monitored power characteristic, since D 3 does not disclose any communication of a determination result.

V.

Although publication D 4 (US 2003/0110012 A1) "Orenstien" does not conflict with the legal validity of granted claim 1 of the patent in suit, it does conflict with the legal validity of granted claim 3, including the auxiliary requests relating to it.

1.

D 4 relates to a distribution of processing or computing activity to different hardware processors based on considerations including the consumption of electrical power of the individual hardware processors. Figure 1 thereof illustrates an embodiment of a processing device or system comprising a plurality of individual processing units between which processes can be exchanged under the control of a thermal or power monitor. Figure 2 illustrates an embodiment of a dual-core processor and an associated monitoring module (see paragraphs [0009], [0010] of D 4). In the embodiment of Figure 2, power consumption or thermally motivated process shifts in the context of a dual-core processor 200 may be performed on a single integrated circuit (see para [0023]). A power monitor 260 receives information from both cores to enable analysis of power consumption and/or temperature for each core as well as the entire processor. The core 205 includes a thermal sensor 210. In addition, known substitutes may be used to measure temperature or power consumption. For example, measurements of activity level, received current, etc. may also provide a power consumption metric suitable for power monitor 260 to make process switching decisions (see para [0025]). The power monitor 260 includes various modules, including a motion module 280, a sum module 275, a shutdown module 270, and a replacement module 265 (see para [0026]). One operation that may be performed by the power monitor 260 is a summation operation performed by a summation module 275. The summation operation helps to ensure that the total sum of the power of all processing units controlled by a power monitor is within a desired power envelope. If the power exceeds the prescribed limit, the power monitor throttles the processing in response (e.g., by reducing the voltage and/or frequency of some cores) (see para [0033]). In addition, the summing module 275 ensures that the processing throughput is increased as much as possible given the desired thermal envelope. Thus, the summing module can also recognise when the total power consumption exceeds a certain value

falls below. Voltages or frequencies on one or both cores can be increased to improve performance if the summation module detects that the total power consumption is below a selected power consumption metric (see para [0034]).

2.

Citation D 4 does not disclose any anticipation of the features of the granted claim 1 of the patent in suit that is prejudicial to novelty and does not otherwise stand in the way of its patentability either

a)

However, the teaching of D4 also discloses an integrated circuit (cf. para. 0023 of D4:
"In particular, in the embodiment of FIG. 2, power consumption or thermally motivated process swapping can be performed in the context of a dual core processor 200 on single integrated circuit."). D 4 discloses that the "power monitor" can be designed as part of the "dual core processor" and thus as part of a component typically and according to the disclosure of D 4 designed as an integrated circuit. The person skilled in the art can thus infer an integrated configuration from the teaching of D 4. This also has a first module (cf. para. [0024] *"In the embodiment of FIG. 2, a power monitor 260 receives information from both cores to allow analysis of power consumption and/or temperature for each specific core as well as the overall processor."*).

b)

D 4 does not teach a link to a second module according to the feature that subsequently corresponds to a third electrical device, whereby the latter issues the current adjustment command. The power monitor also has a *sum module*. However, the link via functional units cannot be inferred from the publication. Finally, D 4 does not disclose a third electrical device configured to process the received information to determine a power adjustment command and communicate the command to the power supply circuit. Each of the modules 280, 275, 270 and 265 of the power monitor 260 is fixedly assigned a different functionality in the D 4 that is completely different from the functionality of the third electrical device according to the feature. In this respect, there is no disclosure of a specific, characteristic switching sequence of the individual modules. Rather, these each act autonomously and issue current adjustment commands (cf. para. [0026] of D4). However, this is different from the patent-compliant monitoring in a kind of series connection by a first module, communication by a second module and processing of all data in a standardised third device, which then issues the individual current adjustment command.

3.

D4, on the other hand, precludes the novelty of claim 3 as a whole. Claim 3 is not legally valid either in the version granted or in the version of the auxiliary requests asserted.

a) D 4 discloses a method (*see para [0035]: "monitoring sequence")* for monitoring power, comprising the steps of monitoring at least one characteristic of electrical power received from a first electrical device (*see para [0024]: "the core 205 includes a thermal sensor 210", para [0025]: "known substitutes for measuring temperature or power consumption may be used";* feature 3.1) and the

Monitoring at least one characteristic of the electrical power received from a second electrical device (*see para [0024]: "Likewise, the core 245 includes a thermal sensor 250", para [0025];* feature 3.2).

b)

The D 4 further teaches determining power control information from an analysis of the electrical performance characteristics monitored in steps 820 and 830 according to feature 3.3 (see para [0037] of the D 4), *according to which "if the total sum of power consumption is too low given the desired system performance or thermal envelope, the process [is] continued with block 600 in FIG. 6. Block 600 checks whether both processors are active and the power is still too low. If both processors are active, then the voltage and/or frequency for both processors can be increased as indicated in block 610".*

c)

The D 4 further teaches, according to feature 3.4, that the step of determining power control information comprises determining a power adjustment command that can be interpreted and processed by a power supply circuit that receives the command, and characterised by communicating the power control information to the power supply circuit that supplies the electrical current to the first and second electrical devices (feature 3.5). In contrast to claim 1, claim 3 as granted does not require an integrated circuit having a receiving and transmitting module, nor does it require a third device that processes the received information to determine and communicate a power adjustment command. That this significantly broader claim version of claim 3 and feature 3.4 therein is already disclosed by D 4 follows from the description in paragraph [0033] of D 4, according to which, if the power exceeds *the prescribed* limit, the power monitor can *throttle* processing in response *("If the power exceeds the prescribed limit, the power monitor in response throttles processing (e.g., decrease voltage and/ or frequency of some of the cores").* From this information, the skilled person understands that the power monitor determines the voltage adjustment command, which can be interpreted and processed by a power supply circuit that receives the command. (cf. para *[0037]: "the voltage level to the two power wells may be increased and/or a clock frequency for each core 205 and 245 may be increased")*. Since the power monitor throttles processing in response, for example by reducing the voltage and/or frequency of some cores (cf. para [0033]) and the voltage level to the two power wells may be increased (cf. para [0037]), it is obvious to a person skilled in the art that the voltage adjustment command is communicated from the power monitor to the power wells. Moreover, for the anticipation of feature 3.4, it is sufficient that the power monitor generates this current adjustment command instead of a third device in claim 1.

4.

The auxiliary request 1 to claim 3 does not allow sufficient differentiation from the teaching of D 4. this auxiliary claim i s intended to limit claim 3 to the effect that it is supplementary:

> *wherein the step of determining power control information comprises determining information for mediating between the first and second electrical control systems.*

device, the switching taking into account the power supply requirements and/or priorities of the first and second electrical devices.

This feature is already disclosed with the description in para [0037], *according to which, in another embodiment, the voltage or frequency of one of the two processors [may] be favoured over the other. For example, the operating system may provide control settings that indicate which processor or process is to be favoured when additional processing power is available.* Thus, control settings can indicate which processor should be favoured, i.e. prioritised, in terms of feature 3.6.

d)

The other auxiliary requests relating to claim 3 are not capable of providing any further delimitation. Claim 3 of auxiliary request 1a corresponds to claim 3 of auxiliary request 1; claim 3 of auxiliary request 2 is based on the granted patent claim 3, with the following feature added:

3. 7wherein the first electrical device is a microprocessor circuitry and the second electrical device is a memory circuit.

D 4 points out to the skilled person that one *embodiment is directed to a microprocessor with multiple cores*, but that the techniques described may *be more generally applied to* other types *of electronic components or across several components* (cf. para [0016]: "*While one embodiment is directed to a microprocessor with multiple cores, the techniques described may more generally be applied to other types of electronic components or across several components*."). It is therefore obvious to the person skilled in the art to also use the method for a combination of microprocessor and memory circuit, for example. As a result, the method of claim 3 of auxiliary request 2 is obvious to the skilled person from D 4, so that it is also not patentable.

Claim 3 of auxiliary request 3 is based on auxiliary request 1 and moreover shows feature 3.7 of auxiliary request 2; claim 3 of auxiliary request 3a corresponds to claim 3 of auxiliary request 3. In this respect, too, the method of claim 3 in the form of the auxiliary requests is obvious to the skilled person from D 4, so that this is also not patentable and claim 3 is therefore not legally valid as a whole.

VI.

Publication D 5 (US 2004/0201931 A1) "Korcharz" is part of the body of law of the patent in suit.

D 5 deals with power supply systems comprising, inter alia, a plurality of internal and external power sources (see D 5, para. [0007]). D 5 is the US patent application US 2004/0201931 A1, which was published on 14 October 2004 and thus between the two priority dates claimed. The dispute as to whether the patent in suit can validly claim the first priority can be left to one side. This is because D 5 would not prevent the patentability of the patent in suit in any case. D 5 does not disclose that the current is monitored by the controller and thus by a first module within the integrated circuit 350, as para. [0067] shows ("*Monitor 370 monitors the power drawn by load 60 and communicates data regarding the power drawn by load 60 to controller 350. [...]. In another exemplary embodiment, controller 350 retrieves the rated power capability, and optionally the*

desired operating range, of power supply 240. In either of these exemplary embodiments, controller 350 sets the current limit of the associated variable current limited power supply 220 to be equal to the power drawn by load 60 minus the power desired to be drawn from power supply 240.").

This monitor 370 thus goes beyond the scanning circuits of D 1 in terms of components, as D 5 allocates the monitoring task to it. However, the fact that the controller receives the current data from the first two devices and processes it in its modules is not disclosed. D 5 therefore falls short of the teaching of the patent in suit and requires more components than the patent in suit. Moreover, since the individual monitors 370 are not located in one circuit, but in three separate circuits, each within a module 330a, 330b, 330c, there is also a lack of a uniform first module.

VII.

The patent in suit proves to be inventive with respect to claim 1 in the version of auxiliary request 1.

1.

According to Art. 56 p. 1 EPC, an invention is considered to involve an inventive step if it is not obvious to a person skilled in the art from the prior art. This inventive solution begins beyond the area which, based on the state of the art, is defined by what a well-trained person skilled in the art with average knowledge, skill and experience can routinely develop and find in the relevant technical field (see Benkard/Söldenwagner, EPC, 4th ed., Art. 56 para. 9). An invention is deemed to exist if it does not result from the usual approach of the person skilled in the art, but requires an additional creative effort on their part (LK Düsseldorf, decision of 3 July 2024 - UPC CFI 7/2023, GRUR-RS 2024, 17732 para. 93).

2.

Contrary to the defendant's view, the skilled person would have had no reason to look for allocation solutions in the style of D 4 after reading D 1. D 1 already offers solutions for transient events, in particular overvoltage protection. In addition, the teaching of D 1 actually leads the skilled person away from a solution according to auxiliary request 1 to take into account the needs of the overall processor or its other areas and points solely to the individual "better supply" in the event of increased power requirements, which, however, is neither to be regarded as the purpose nor the intention of the teaching of D 1.

3.

A problem-solution approach would not lead to a different result. Under this approach, the inventive step is assessed in such a way that, from the perspective of a person skilled in the art, the objectively given state of the art at the priority date relevant for the application is taken as a starting point, the problem posed by the invention and intended to be solved is determined and the question of the obviousness of the solution to this problem is considered from the perspective of the person skilled in the art with the capabilities objectively to be expected of him (BeckOK PatR/Einsele, 32nd ed. Ed. 15.4.2024, EPC Art. 56 para. 1b, mwN). Since the problem must not be identical to the solution, it is not possible to define the prioritisation of the power allocation according to the granted claim 2 (auxiliary request 1 to claim 1) as a problem. The relevant task would therefore be the optimisation

of the power supply. However, the prioritisation proposed by the patent in claim 1 with auxiliary request 1 would not be an obvious solution for this task because it could potentially lead to a suboptimal result for the power supply.

VIII.

In view of the above, the patent in suit in relation to claim 1 in the version of auxiliary request 1 with deletion of claim 3 - irrespective of the admission of auxiliary request 1^{bis} - proves to be legally valid. A complete cancellation of the patent-in-suit in view of the lack of legal validity of claim 3 is not to be carried out.

1.

Under Article 65(3) UPCA, where the grounds for invalidity relate to only part of the patent, the patent shall be limited by a corresponding amendment to the claims and declared partially invalid, without prejudice to Article 138(3) EPC. Article 138(3) EPC reads:
"In proceedings before the competent court or authority relating to the validity of the European patent, the patent proprietor shall be authorised to limit the patent by amending the claims. The proceedings shall be based on the version of the patent thus limited." The concept of partial revocation of the patent by limitation through amendment of the patent claims is derived from the EPC and from the legal systems of of the contracting member states (Tilmann/Plassmann/Fähndrich/Klicznik/M. Tilmann, 1st ed. 2024, UPCA Art. 65 para. 269). In the opinion of the local division, a patent can therefore also only be revoked in nullity proceedings before the UPC to the extent that the grounds for revocation are sufficient, so that a patent can also remain (partially) valid to the extent of individual independent patent claims within the scope of the complete set of claims filed as a main or auxiliary request, if this corresponds to the procedural concerns of the patent proprietor (see Federal Court of Justice, decision of 27 June 2007, X ZB 6/05, GRUR 2007, 862 - Informationsübermittlungsverfahren II).

2.

In the present case, the patent in suit contains two independent claims in the form of the system claim according to the original claim 1 and the method claim according to the original claim 3. The system claim and the method claim are not based on each other in such a way that the cancellation of the method claim would necessarily require the cancellation of the system claim because they would be closed sets of claims. Rather, the two claims differ both in the formulation of their features and in the required features as a whole. The broader method claim in particular falls short of the features claimed and required by the system claim and in particular has neither an integrated circuit nor the feature of a third device which mediates between the first and second electrical devices. The fact that claim 3 has been found not to be legally valid in its entirety does not therefore lead to the patent being revoked in its entirety.

As already stated, the alternative maintenance of claim 1 in the version of auxiliary request 1 with deletion of claim 3 is to be carried out independently of the admission of auxiliary request 1^{bis} (see above under A. III. 2. d)), since such a result was part of the plaintiff's defence against the action for annulment from the outset.

D.

The action is unfounded. In any case, the feature according to auxiliary request 1 is not realised in accordance with the wording, which would be necessary in view of the limited legal scope of claim 1 of the patent in suit.

I.

In the starting point, the power supply of the "AMD Ryzen" processor installed in the Tesla Model Y via an MP 2858 chip and a total of five MP NM 8694 chips, which are arranged and connected together with the "AMD Ryzen" processor on a common circuit board of the Tesla computer, is a power control system within the meaning of features 1.1 and 1.2 of the patent in suit.

1.

The accused embodiment also has a power supply circuit which supplies the electrical current to the first and second devices within the meaning of feature 1.3. It is to be assumed with the applicant that it is not necessary for the power supply circuit to be realised by means of a single self-contained, quasi physically isolated, electrical circuit. The power supply circuit according to feature 1.3 is therefore formed in the challenged embodiment by the totality of the five MPNM 8694 chips. These are components of a single circuit within the meaning of the patent in suit, which - within the meaning of para. [0129] KPS - has several active components, namely the MPNM 8694 chips. These chips have several components such as power output modules 642 and 644 via the "control interface module 646" with several receipts and in some cases also directly electrically connected outputs.

2.

Furthermore, the MP 2858 chip used by the Tesla car computer constitutes an integrated circuit within the meaning of feature 1.4, which also has a first and a second module in accordance with the feature. The fact that the plaintiff relied on different classifications of the first and second modules and the third device in response to the Board's reference proves to be harmless, since it has asserted that in its opinion all of these classifications would constitute patent infringement. However, there are doubts as to whether the accused embodiment makes use of feature 1.4.1 of the claim, according to which the first module must be designed such that it monitors at least one characteristic of the current received by the first electrical device and at least one characteristic of the electrical current received by the second electrical device. This is because the plaintiff has not been able to demonstrate beyond doubt that the modules actually measure the current *received* and not merely the current emitted. However, the patent in suit teaches precisely the measurement of the current received and not that of the current supplied (see paragraphs [0002 and 0003] of the patent in suit). In order to overcome signal losses, according to the patent the respective value is to be tapped at the device and not at the power supply unit.

II.

Ultimately, however, it can be left open whether in the contested infringing embodiment the modules measure the current received by the devices or merely the current emitted. In any case, the contested embodiment does not make use of the subject matter of claim 1 according to auxiliary request 1 of the patent in suit. The factual submission of the

Therefore, the defendant's configuration of the challenged infringing form, which is subject to confidentiality, is not relevant.

1.

The plaintiff refers to the "Functional Block Diagram" of the data sheet of the MP 2855 chip submitted as Annex EIP 7 for its submission on infringement. It claims that "PWM Generation" is mentioned in the Rail 1 and Rail 2 blocks. PWM (pulse width modulation) always requires switching commands. According to the Ryzen PCB analysis, at least some of these switching commands are transmitted to an 8694 chip after multiplexing in the "PWM MUX" block via the PWMW9, PWM1, PWM2, PWM3 and PWM4 connections. The current or voltage supply for the two power domains (claimed first electrical device and second electrical device) of the Ryzen processor chip is adjusted by means of the two rails of the claimed third electrical device. The 2858 chip of the challenged embodiment thus uses a so-called "total current report" (cf. EIP 7, p. 23). This means that the "total current" or the "total current report" is generated by a (chip-internal) summation of all current measurement signals which are received via the various CS receipts of the 2855 chip and the 2858 chip from the CS outputs of the respective (signal amplifying) 8694 chips. The defendants have countered this submission.

2.

The local division is not convinced with the necessary certainty that it can be deduced from the data sheet in EIP 7 that the MP 2855 chip even provides for a sophisticated mediation of the current values of the two loops (rails). In fact, the total current is also calculated separately for each of the two rails, as the respective sum is then converted into voltage via internal "IMON resistors". The two rails are therefore treated completely separately in the system according to the descriptions in the data sheet of the MP 2858 chip, so that there is no mutual consideration of the current measurement signals that would be transmitted by the MPNM 8694 chips. According to the data sheet, there is therefore a separate "IMON resistor" for each of the two rails (see the distinction between "IMON1" and "IMON2" throughout the data sheet and in particular Appendix EIP 7, p. 23, bottom left-hand column). A separate "current report" is therefore generated for each rail via the "IMON resistor" implemented separately for each rail, which can then form the basis of the "Auto Phase Shedding" for the respective rail. Accordingly, there is also a separate
"current report". Only the values of the MPNM 8694 chips that are assigned to the respective rail are totalled for this "current report". The others are not taken into account. A mutual consideration can therefore not be found in the data sheet.

3.

Moreover, it is not apparent that the phase shedding function provided by the MP 2855 chip can be seen as anything more than an overall control of the current allocation. In particular, it is not apparent that the third electrical device in the form of the MP 2855 chip would use the phase shedding function to process the received current-related information in such a way as to then take into account the power supply requirements and/or *priorities* of the other two electrical devices with a view to adjusting the current (paras. [0136], [0164] KPS) and, for example, determine that

the power supply requirement of the first electrical device *outweighs* the power supply requirement of the second electrical device and, based on this corresponding power supply control information to the power supply circuit (par. [0137], [0139] KPS).

a)

In the EIP 7 document, it is first stated that the total current from each CS is totalled and converted into an IMON voltage via internal resistors. The following sentence then states that the IMON resistors of both rails are internal (see EIP 7, p. 23, left column, bottom: *"The total current is summed from each CS, and converted into an IMON voltage through internal resistors. The IMON resistors of both rails are internal."*). The person skilled in the art can only immediately and unambiguously infer from this information that the total current is only totalled from each CS within a rail and not across both rails. For this reason, a distinction is also made between IMON1 and IMON2 throughout the document (cf. e.g. p. 111: *"IMON1_FAST_SENSE (D3h)", p. 167: "IMON2_FAST_SENSE (D3h)"*).

b)

The EIP 7 document also states that the APS function (*"automatic phase-shedding"*) is implemented by comparing the sensed load current with each power state current threshold, whereby current drop-off thresholds for Rail 1 and Rail 2 are programmed in registers (see EIP 7, p. 25, right-hand column): *"The APS function is implemented by comparing the sensed load current with each power state current threshold. The MP2855 provides two types of registers to configure the APS function. Programme drop-phase current thresholds for rail 1 and rail 2 in registers 1Ch, 1Dh, 1Eh, and 1Fh on both Page 0 and Page 1."*). It is also pointed out that further information can be found in section MFR_APS_LEVEL_23P_R1 (1Eh) on page 45. On page 45, the expert can see that the command MFR_APS_LEVEL_23P_R1 defines the current threshold for the automatic phase shedding (APS) of Rail 1 for 3-phase and 2-phase operation (*cf. p. 45: "The MFR_APS_LEVEL_23P_R1 command on Page 0 sets the rail 1 automatic phase-shedding (APS) current threshold for 3-phase and 2-phase operation."*), whereby there is a separate command MFR_APS_LEVEL_23P_R2 for Rail 2 according to pages 36 and 116.

c)

This means that only one current summation per rail and also only one phase-shedding per rail can be taken from the EIP document. There is no indication that the feature according to auxiliary request 1 mediates between the first and the second electrical device (SOC and CPU of the AMD Ryzen), whereby the mediation takes into account the power supply requirements and/or the priorities of the first and the second electrical device.

4.

It can be left open whether the plaintiff's supplementary submission in the document dated 27 May 2024 can be taken into account, as the substance of the submission cannot be accepted.

a)

Even taking into account the applicant's submission that there is a further phase shedding functionality which is based on an SVI2-set PS command, which is described on pages 71 and 141 of EIP 7 on the one hand and on page 34 of EIP 7 in Table 9 on the other.

that the phase shedding ("dropping the phases") directly determines the power state, it is not possible to establish that the feature has been realised. The fact that the SVI2 interface not only forwards the adjustment command, but also generates it and mediates between the first and second electrical devices (parts of the AMD Ryzen chip), cannot be inferred from the above-mentioned passages. The mere fact that electricity is allocated is not sufficient for the feature to be realised with regard to the necessary differentiation from citations D 1 and D 4. Rather, the feature in question requires that the allocation by the third device takes into account the reciprocal needs and/or priorities - and there is no evidence of this. Furthermore, it is explicitly stated on page 70 of EIP 7 that the MFR_APS_CTRL command determines the timing and behaviour of the automatic phase shedding control (APS) for Rail 1, and on page 140 that the MFR_APS_CTRL command determines the APS-related timing and behaviour for Rail 2. This means that the SVI2 commands transmitted separately for each "Power Domain" are implemented separately for each of the two "Power Domains". There is no mutual consideration and thus no "mediation" within the meaning of claim 1 according to auxiliary request 1.

b)

Even taking into account the plaintiff's submission that the "mediation" according to auxiliary request 1 is also realised by a further functionality of the MP 2858 chip, according to which this is linked to the total current (in EIP 7 as "total current" or "total current"). "total load current"), with which the PWM outputs of both the "Rail 1 PWM Generation" and the "Rail 2 PWM Generation" are controlled via the downstream "PWM MUX" (see EIP 7, Functional Block Diagram on page 15), it is not possible to determine whether the feature has been realised.

Insofar as the plaintiff believes that with "over-current protection, OCP" a maximum total current is defined for Rail 1 and Rail 2, which is jointly available for the CPU Power Domain and the SOC Power Domain, so that the CPU Power Domain assigned to Rail 1 and the SOC Power Domain assigned to Rail 2 compete for this total current, this does not constitute realisation of the feature according to auxiliary request 1. This is because the sum current function of the overcurrent protection can result in a mutual dependency of the current allocations because they are bound to the sum condition "I1 + I2 = Itotal" due to the overcurrent protection and are therefore mutually dependent on each other. However, this allocation would only be patentable if the current requirements and/or priorities were taken into account and the third device mediated between them and not only the summation condition drew the boundary. However, this cannot be established.

Contrary to the plaintiff's view, a rail-specific consideration would not be absurd because a sum over a single rail would not be a sum but a single value. On the contrary, the data sheet on page 1 of EIP 7 mentions up to nine phases for Rail 1 and four phases for Rail 2, so that summation can actually also take place within a rail. Page 25 of the data sheet shows that a threshold value is provided for each rail. In addition, as mentioned above, the patent in suit relates to the measurement of the current received and not the current supplied (see paragraphs [0002 and 0003] of the patent in suit). In order to overcome signal losses, according to the patent the respective value is to be tapped at the device and not at the power supply unit. The fact that by means of the intended

It is not possible to determine whether such a solution is used in the contested embodiment in order to protect against overvoltage.

4.

Since the further auxiliary requests 1a and 2 do not involve any qualitative changes, the submission of a patent infringement is not supported in this respect either.

E.

In view of the above, the action must be dismissed without further considerations of proportionality pursuant to Article 63(1) UPCA.

A decision must nevertheless be made on the action for annulment.

As part of the decision on costs, the local division took into account that the plaintiff was unsuccessful in its entirety with regard to the applications and was unsuccessful in three quarters with regard to the counterclaim for revocation due to the considerable reduction in the scope of the patent in suit. In the absence of other indications, the value of the action stated by the plaintiff of EUR 1 million is to be taken as a basis. The value of the revocation counterclaim is to be increased by up to 50 per cent in accordance with item I. 2. b) (2) (ii) of the "Guidelines of the Administrative Committee for the determination of court fees and the upper limit for recoverable costs of 24 April 2023" (see Art. 36 para. 3 UPCA, R. 370.6 RoP), i.e. EUR 1.5 million.

DECISION

I. The action is dismissed.

II. The European patent EP 1 612 910 B1 is declared invalid insofar as its subject-matter extends beyond claim 1 in the version of auxiliary claim 1 with the deletion of claim 3, which has the following wording:

1. Power control system (600) with:

a first electrical device (610) which receives electrical current (611), a second electrical device (615) which receives electrical current (616),

a power supply circuit (540) which supplies the electric current to the first and second devices (610, 615),

an integrated circuit (620), wherein the integrated circuit comprises a first module (622) and a second module (624),

wherein the first module is adapted to monitor at least one characteristic of the current (611) received from the first electrical device (610) and at least one characteristic of the electrical current (616) received from the second electrical device (615),

wherein the second module is adapted to communicate with a third electrical device (630) regarding the at least one characteristic of the electrical current monitored by the first module (622),

wherein the third electrical device (630) is adapted to provide information regarding the at least one monitored performance characteristic of the first and second electrical devices (630).

second electrical device from the second module (624), characterised in that

the third electrical device is adapted to process the received information to determine a current adjustment command and communicate the command to the power supply circuit (640),

characterised in that the third electrical device is adapted to mediate between the first and second electrical devices, the mediation taking into account the power supply requirements and/or priorities of the first and second electrical devices.

III. The remainder of the counterclaim is dismissed.

IV. Orders the plaintiff to pay 85% of the costs of the proceedings and the defendants to pay 15%.

DETAILS OF THE DECISION

Action Number: ACT_463258/2023
UPC number:UPC_CFI_54/2023
Action type: Infringement Action
Related proceedings: CC_577764/2023 and CC_577767/2023
Related proceedings type: Counterclaim for revocation

SIGNATURES

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Presiding Judge Klepsch

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for the Deputy Chancellor

INFORMATION ON THE APPOINTMENT

An appeal against this decision may be lodged with the Court of Appeal within two months of notification of the decision by any party whose applications were unsuccessful in whole or in part (Art. 73(1) UPCA, R. 220.1(a), 224.1(a) RoP).

INFORMATION ON ENFORCEMENT

A certified copy of the enforceable decision is issued by the Deputy Registrar on application by the enforcing party (Art. 82 UPCA, Art. Art. 37(2) UPCA, R. 118.8, 158.2, 354, 355.4 RoP).

This decision was announced at a public meeting on 26 August 2024.

Legally qualified judge Dr Schilling Judge-rapporteur