Order

of the Court of First Instance of the Unified Patent Court
issued on 17 October 2025
concerning EP 3 835 965 B1

APPLICANT:

Hewlett-Packard Development Company, L.P., 10300 Energy Drive, Spring, Texas 77389, USA

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DEFENDANTS:

1. **Andreas Rentmeister e.K.,** Rufacherstr. 7, 79910 Freiburg, Germany

Defendant 1. represented by:	Attorney-at-law Jochen Bühling, Krieger Mes Rechtsanwälte Partnerschaft mbB, Bennigsen-Platz 1, 40474 Düsseldorf, Germany
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EUROPEAN PATENTS NO. EP 3 835 965 B1

PANEL/DIVISION:

Panel of the Local Division in Düsseldorf

DECIDING JUDGES:

This order was issued by Presiding Judge Thomas acting as judge-rapporteur, the legally qualified

judge Dr Schumacher and the legally qualified judge Lopes.

LANGUAGE OF THE PROCEEDINGS: English

SUBJECT: R. 206 RoP – Application for provisional measures

SUMMARY OF THE FACTS:

1. By way of an application for provisional measures, the Applicant seeks a preliminary injunction and further provisional measures against the Defendants in respect of an alleged infringement of EP 3 835 965 B1 (hereinafter: patent in suit).

2. The Applicant is the registered proprietor of the asserted parts of the patent in suit. The application for the patent in suit was filed in English language on 11 February 2019, whereby the application was published on 16 June 2021. The mention of the grant of the patent in suit was published on 31 August 2022. No opposition was filed against the patent in suit. Currently, the patent in suit is in force in the UPC Member States Belgium, Denmark, France, Germany, Italy, the Netherlands and Sweden. The patent in suit was originally opted-out of the UPC system. The withdrawal of the opt-out was filed on 23 October 2024.

3. The patent in suit is titled "Logic circuitry". Its claim 13 reads as follows:

> "Logic circuitry (204, 700, 700B, 812) comprising one or more logic circuits for association with a replaceable print apparatus component (104, 200, 514) comprising:
>
> logic (702, 702B) and an I^2C serial data bus interface (704, 704B),
>
> wherein the serial data bus interface (704, 704B) is to interface with a serial data bus (500) of a print apparatus (102, 300), and,
>
> **characterised in that** the logic (702, 702B) is, in response to a first command sent to the logic circuitry via the serial data bus (500) connected to the serial data bus interface (704, 704B), the first command including a time period, to generate a low voltage condition on the serial data bus (500) for a duration based on the time period, and, after the duration, return to a default voltage condition on the serial data bus (500), wherein the logic (702, 702B) is configured to generate the low voltage condition for different durations based on respective different received time periods, and without reference to a clock signal of the serial data bus (500)."

With regard to the wording of claims 24 and 25, which are only asserted by way of "in particular if" motions, reference is made to the patent specification of the patent in suit.

4. The following scaled-down figures, taken from the patent in suit, illustrate the invention. According to the description of the patent in suit, Figure 1 is an example of a printing system.

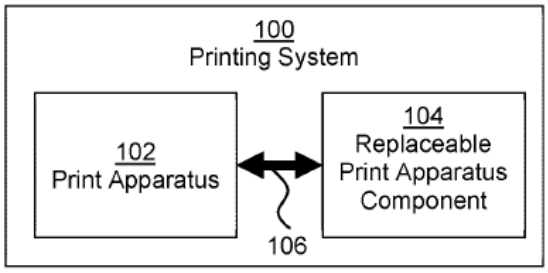


Fig. 1

Figure 4 shows an example of a method of operation of logic circuitry associated with a replaceable print apparatus.

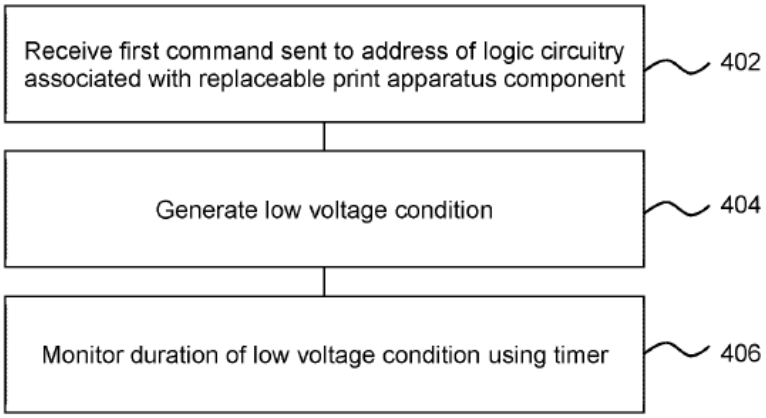
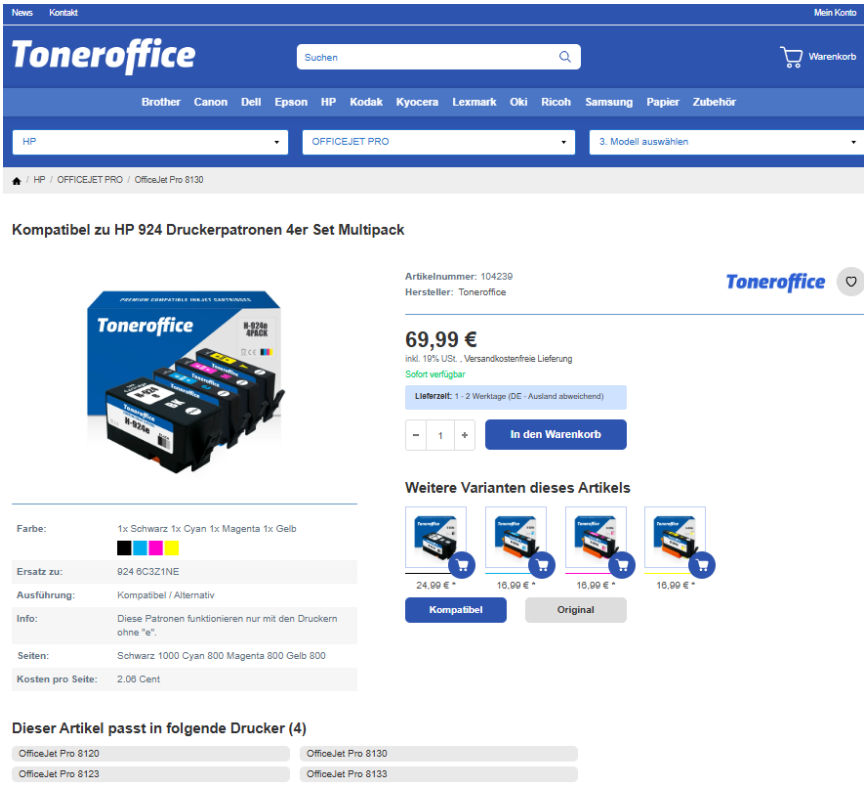
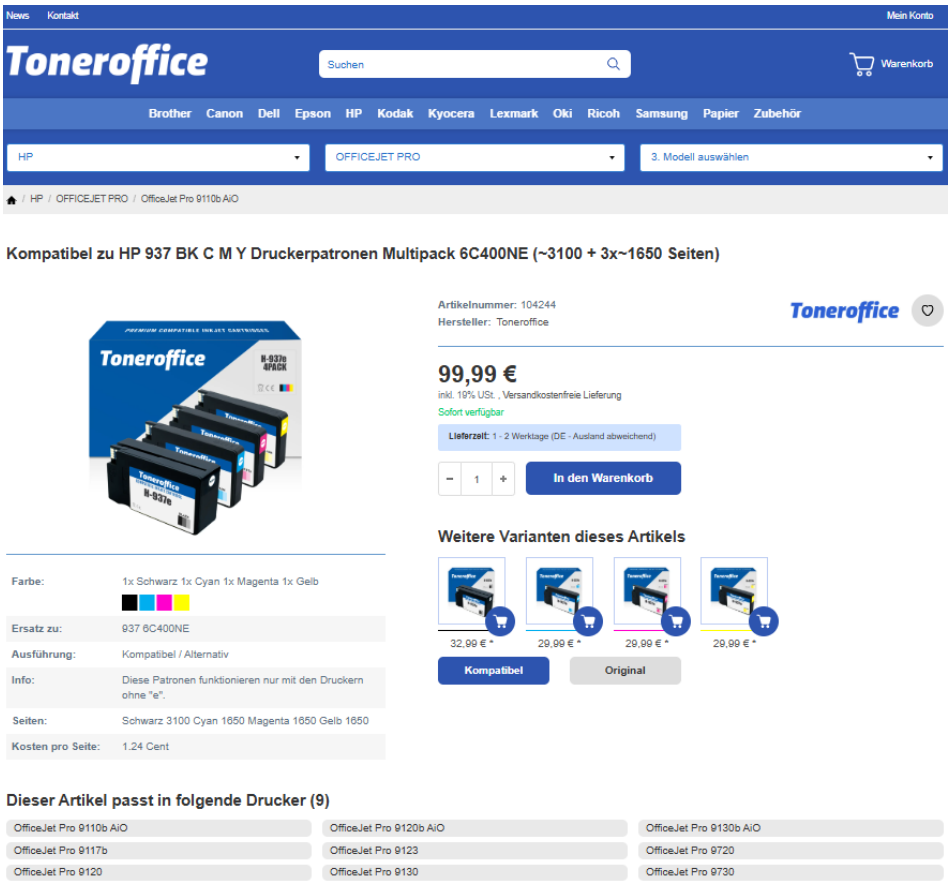


Fig. 4

5. The Applicant is a subsidiary of HP Inc., one of the largest US PC and printer manufacturers. The products offered by HP Inc. and its affiliates include printer cartridges with integrated print heads (known as Integrated Print Head Cartridges, IPH), and such where the print head is installed in the printer and the cartridges are in the form of a separate ink supply, so-called Individual Ink Cartridges (IIC).

6. Defendant 1. is the business name under which the registered merchant Andreas Rentmeister offers and sells printer cartridges inter alia through its online store www.toneroffice.de. The range of products manufactured and sold by Defendant 1. includes rebuilds for HP cartridges of type 924 and 937 (hereinafter: challenged embodiments I), as shown in the screenshots below:





7. Defendant 1. offers and sells these cartridges not only to customers in Germany, but also (inter alia) to customers in Belgium, France and the Netherlands.

8. According to the Applicant, Defendant 2. is a company based in China that offers and sells printer cartridges inter alia through the online platform Amazon. The range of products offered and sold by Defendant 2. includes rebuilds for HP cartridges of type 924 and 937 (hereinafter: challenged embodiments II) and its offer is targeted (inter alia) towards customers in Belgium, Denmark, France, Germany, Italy, the Netherlands and Sweden.

9. The current application for provisional measures is directed against printer cartridges of types 924 and 937 that are marketed and sold by the different Defendants under different brands either as single cartridges for individual colours (C, Y, M or K) or as a multipack for all four colours. This application also concerns all subcategories of the two types of cartridges (type 924 and 937) which include inter alia cartridges of the type 924e/924XL and 937e/937XL. Together, all these printer cartridges of type 924 and 937 (including the respective subcategories) will be referred to as "the challenged embodiments".

MAIN STEPS OF THE PROCEEDINGS:

10. On 13 June 2025, the Applicant has filed an application for provisional measures.

11. The application for provisional measures was served to Defendant 1. on 28 June 2025. By brief of 23 July 2025, Defendant 1. has notified the Court about a settlement reached between the parties. Furthermore, Defendant 1. has stated that "as agreed between the parties, the Defendant 1. will not defend himself against the motions 1, 2, 3 and 5 as put

forward by the Applicant in its application of 13 June 2025 (pages 8/9). In so far the court may issue a judgement by default against Defendant 1. The Applicant will withdraw motion 4. (page 9 of the application for provisional measures)".

12. In accordance with this, on 24 July 2025, the Applicant withdrew motion 4 and requested a decision by default against Defendant 2. in all other aspects.

13. Service to the Defendant 2., who is based in China, has not yet been completed.

INDICATION OF THE PARTIES' REQUESTS:

14. The Applicant requests the following:

1. Defendants are ordered to refrain from, making, offering, placing on the market, using or possessing for the purposes mentioned, or importing or storing the product for those purposes in the territories of Belgium, Denmark, France, Germany, Italy, the Netherlands, and Sweden,

Logic circuitry (204, 700, 700B, 812) comprising one or more logic circuits for association with a replaceable print apparatus component (104, 200, 514) comprising:

logic (702, 702B) and,

an I2C serial data bus interface (704, 704B),

wherein the serial data bus interface (704, 704B) is to interface with a serial data bus (500) of a print apparatus (102, 300), and,

characterized in that, the logic (702, 702B) is, in response to a first command sent to the logic circuitry via the serial data bus (500) connected to the serial data bus interface (704, 704B), the first command including a time period,

to generate a low voltage condition on the serial data bus (500) for a duration based on the time period, and

after the duration, return to a default voltage condition on the serial data bus (500),

wherein the logic (702, 702B) is configured to generate the low voltage condition for different durations based on respective different received time periods,

and without reference to a clock signal of the serial data bus (500),

(EP 965, *claim 13*)

in particular if the logic circuitry (204, 700, 700B, 812) according to any of claims 13-23 further comprises a timer (706),

(EP 965, *claim 24*)

in particular if the logic circuitry (204, 700, 700B, 812) according to claim 24 is to monitor

the duration of the time period using the timer (706).

(EP 965, *claim 25*)

2. Defendants are ordered to provide counsel for Applicant within 4 weeks after service of the order rendered in this matter, with a written statement, substantiated with appropriate documentation of:

   a. the origin and distribution channels of the infringing devices referred to under 1. in the (including the full names and addresses of the legal entities that are involved);

   b. the identity of any party involved in the production or distribution of the infringing devices referred to under 1. (including the full names and addresses of the legal entities that are involved).

3. Each Defendant is ordered to pay to the Court penalty payments of up to € 1 000 per infringing device made, offered, placed on the market, used or possessed for the purposes mentioned, or imported or stored for those purposes in the territories of Belgium, Denmark, France, Germany, Italy, the Netherlands, and Sweden or up to € 250 000 per day for each day the respective Defendant fails to comply with the order under 1. above, and penalty payments up to € 100 000 per day for each day the respective Defendant fails to comply with the order under 2. above, with a part of a day counting as an entire day.

4. Defendants are ordered to pay the interim costs of the proceedings.

5. These above orders shall be effective and enforceable immediately.

GROUNDS FOR THE ORDER:

A. Type of order

15. Pursuant to R. 209.1(a) RoP, the Court shall have discretion to inform the defendant about the application for provisional measures and to invite him to lodge, within a time period to be specified, an objection to the application, which shall contain the reasons why the application shall fail and the facts and evidence relied on, in particular any challenge to the facts and evidence relied on by the applicant.

16. If the defendant does not lodge an objection within the time period set by the Court or decides not to substantiate its objection for reasons outside of the court proceedings, as in the present case, the application for provisional measures can be decided based on the applicant's submissions by means of a regular order in the PI proceedings (follow up to UPC_CFI_213/2025 (LD Düsseldorf), Order of 10 July 2025, headnote 1 and mn. 213 - 214 – Aesculap v Shanghai International Holding). In a situation like this, a decision by default (R. 355.1(a) RoP) is not something to be considered for several reasons. First, such a decision is not provided for in Rules R. 205 et seq. RoP for that scenario. Second, only a regular PI order is consistent with the underlying interests involved: It is up to the defendant to decide whether to accept the invitation and lodge an objection, which fulfils the requirements of R. 209.1(a) RoP. If the defendant declines the invitation, there is no reason to grant him the advantages of a decision by default. The associated possibility of setting aside the decision (see R. 356 RoP) would conflict with the Applicant's interest in effectively enforcing its patent in the PI proceedings (UPC_CFI_449/2025 (LD Düsseldorf), Order of 3 September 2025,

mn. 21 – Hewlett-Packard v Rentmeister).

17. The fact that the Applicant has, in addition to its regular motions, also requested a decision by default does not prevent a regular order from being issued. Pursuant to Art. 76(1) UPCA, the Court shall decide in accordance with the requests submitted by the parties and shall not award more than is requested. The present order falls within this framework. The Applicant has applied for a preliminary injunction and further provisional measures. The subsequent application for a decision by default merely supplements this application, but does not replace it. Provided the requirements are met, the Court may grant a preliminary injunction or further provisional measures through a regular order rather than issuing a decision by default (UPC_CFI_449/2025 (LD Düsseldorf), Order of 3 September 2025, mn. 22 – Hewlett-Packard v Rentmeister).

B. Grounds for the order

18. The application for provisional measures is, at least insofar as it is directed against Defendant 1., admissible. It is also successful on the merits.

I. Entitlement

19. As the Applicant is the registered proprietor of the patent in suit, it can be assumed for the purposes of the PI proceedings that the Applicant is entitled to bring actions and thus also applications for preliminary injunctions and other provisional measures before the Court under Art. 47(1) UPCA in conjunction with R. 8.5 (a) and (c) RoP.

II. Infringement and validity

20. Based on the Applicant's submissions, the Panel is of the opinion that it is more likely than not that the patent in suit is infringed by the offer and distribution of the challenged embodiments I by Defendant 1. in the territory of the Contracting Member States where the patent in suit is in force (R. 211.2 RoP). On summary examination, the challenged embodiments I make direct and literal use of the technical teaching of the respective claim 13 of the patent in suit.

1. PATENT IN SUIT

a. Scope of the Patent

21. The patent in suit refers to a logic circuitry.

22. As the patent description explains in its introduction, serial data bus protocols such as Inter-integrated Circuits (I^2C) protocol and Serial Peripheral Interface (SPI) protocol allow at least one 'master' integrated circuit (IC) to communicate with at least one 'slave' IC, for example via a bus. I^2C, and other communications protocols, communicate data according to a clock period. For example, a voltage signal may be generated, where the value of the voltage is associated with data. For example, a voltage value above x may indicate a logic "1" whereas a voltage value below x volts may indicate a logic "0", where x is a predetermined numerical value. By generating an appropriate voltage in each of a series of clock periods, data can be communicated via a bus or another communication link (para. [0001]).

23. Some 2D and 3D printing systems include one or more replaceable print apparatus components, such as print material containers (e.g. inkjet cartridges, toner cartridges, ink supplies,

build material supplies etc.), inkjet printhead assemblies, and the like. In some examples, logic circuitry associated with the replaceable print apparatus component(s) communicate with the logic circuitry of the print apparatus in which they are installed, for example communicating information such as their identity, capabilities, status and the like (para. [0002]).

24. In some examples, these communications utilize 12C communications. In such examples, the master IC may generally be provided as part of the print apparatus (which may be referred to as the 'host') and a replaceable print apparatus component would comprise a 'slave' IC, although this need not be the case in all examples. There may be a plurality of slave ICs connected to an I^2C communication link (for example, containers of different colors of print agent). The slave IC(s) may comprise logic circuitry to perform data operations before responding to requests from logic circuitry of the print system (para. [0003]).

25. According to the patent in suit, US9582443 discloses a serial control channel processor that facilitates communication between remote entities of different communication protocols using a timing instruction (para. [0004]).

26. In some examples, it may be intended to detect the physical location of slave devices that are attached along a serial bus. It may, for example, be intended that devices such as replaceable print apparatus components occupy a certain designated physical position within a print apparatus. For example, in a printing apparatus with ink supply devices attached to a serial bus, there may be an expected position for, for example, a black cartridge, a yellow cartridge, a cyan cartridge and a magenta cartridge, each of which may have a particular address under a communications protocol. By detecting whether specific ink color cartridges have been misinstalled or swapped, printing with incorrect or intended colors may be prevented. A prior patent disclosure is US patent application publication number US 2011/0029705 (para. [0005]).

27. The patent in suit does not explicitly define a problem and the corresponding solution. However, the Court agrees with the Applicant that, based on the overall description, the claims and the description of the prior art, the patent in suit has the objective to provide a fast and accurate verification of the system integrity.

28. As a solution, the patent in suit provides in claim 13 a logic circuitry comprising logic circuits for association with a replaceable print apparatus component, characterised by the following features:

> 13. Logic circuitry (204, 700, 700B, 812) comprising one or more logic circuits for association with a replaceable print apparatus component (104, 200, 514) comprising:
>
> 13.1 logic (702, 702B) and,
>
> 13.2 an I^2C serial data bus interface (704, 704B),
>
> 13.3 wherein the serial data bus interface (704, 704B) is to interface with a serial data bus (500) of a print apparatus (102, 300), and,
>
> characterised in that,
>
> 13.4 the logic (702, 702B) is, in response to a first command sent to the logic

circuitry via the serial data bus (500) connected to the serial data bus interface (704, 704B), the first command including a time period,

13.5 to generate a low voltage condition on the serial data bus (500) for a duration based on the time period, and

13.6 after the duration, return to a default voltage condition on the serial data bus (500),

13.7 wherein the logic (702, 702B) is configured to generate the low volt-age condition for different durations based on respective different received time periods,

13.8 and without reference to a clock signal if the serial data bus (500).

b. Infringement

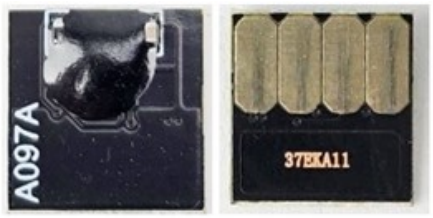
29. Based on the Applicant's submissions, the Panel finds that it is more likely than not that the patent in suit is directly and literally infringed by the offer and distribution of the challenged embodiments I by Defendant 1. in the relevant Contracting Member States, Art. 25(a) UPCA.

30. As the Applicant has demonstrated, all features of claim 13 of the patent in suit are implemented in the challenged embodiments I.

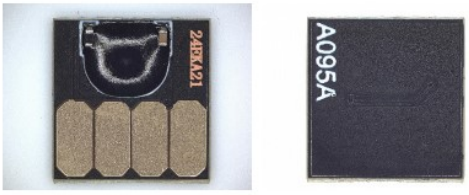
aa. Feature 13 - Logic circuitry (204, 700, 700B, 812) comprising one or more logic circuits for association with a replaceable print apparatus component (104, 200, 514)

31. As the Applicant has demonstrated by various screenshots, the challenged embodiments I include a logic circuitry attached to the cartridge that is or functions as a microcontroller. The logic circuitry is part of the chip attached to the cartridge that can be shown by way of example for one of the challenged embodiments of the HP 937 series (left: front of the chip; right: back of the chip):

Challenged Embodiments of Defendant I (HP 937):

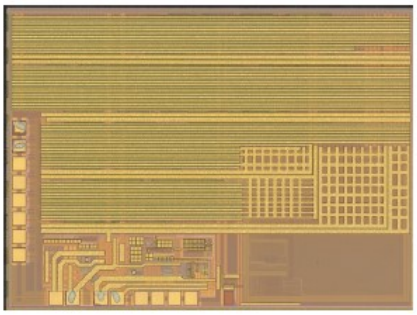


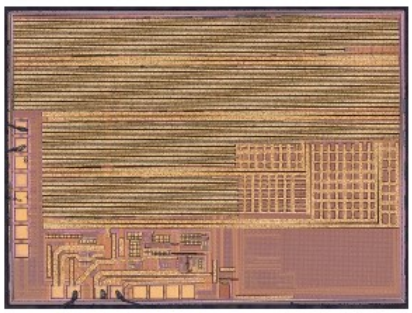
Challenged Embodiments of Defendant I (HP 924):



32. The Applicant also stripped down the chips and pictures and provided pictures of the so-called "decapsulated chip" which reveal the logic in form of a microcontroller to the person skilled in the art in particular given the connecting wires (5 bond wires) from the microcontroller to the printed circuit board on two edges.

Challenged Embodiments of Defendant I (HP 924 (left) and HP 937 (right)):





33. Moreover, the fact that the challenged embodiments I have a logic circuitry within the meaning of feature 13 is also confirmed by the expert opinion submitted by the Applicant as Exhibit FBD 9.

bb. Feature 13.1 - logic (702, 702B)

34. The challenged embodiments I have a logic within the meaning of feature 13.1.

35. As the Applicant has correctly pointed out, the chips attached to the exterior of the challenged embodiments I include such logic, as they comprise a microcontroller, a kind of integrated circuit. Such a microcontroller includes circuitry and an arrangement of circuit elements.

cc. Features 13.2 and 13.3 - an I^2C serial data bus interface (704, 704B), wherein the serial data bus interface (704, 704B) is to interface with a serial data bus (500) of a print apparatus (102, 300)

36. That the challenged embodiments I also have an I^2C serial data bus as requested by features 13.2 and 13.3 has been conclusively demonstrated by the Applicant with reference to two test setups. While Test Setup A allows it to fully review the communication between the used printer's printer controller and the processor of the cartridge memory chip, Test Setup B allows high-resolution voltage-time measurements to be carried out and to produce respective measurements graphs, which allows the observation of the voltage-curve on the I^2C bus. For details of the test setups and the test logs produced by these tests, reference is made to the application for provisional measures as well as Exhibits FBD 10, FBD 11, FBD 15 and FBD 16.

37. As the Applicant has explained in a comprehensive manner, the recorded log data shows that the printer controller of the HP printer sends and receives communication via the I^2C bus to the logic circuitry of the challenged embodiments I. Given the printer controller sends certain commands, it acts as the master, whereas the cartridge's logic receives these commands and acts as a slave, which shows that communication takes place over the I^2C serial data bus.

dd. Feature 13.4 - the logic (702, 702B) is, in response to a first command sent to the logic circuitry via the serial data bus (500) connected to the serial data bus interface (704, 704B), the first command including a time period

38. The Applicant has demonstrated on the basis of the test results submitted as Exhibit 10, that, when logging communication via the I^2C bus with Test Setup A, a first command sent from

the printer to the logic circuitry can be recognised that includes a time period:

```
                                        // Start slot detect timing challenge for BLACK supply
[1589]  D:430.840 |A|070| (tMechIDS) FEATURE_ACUMEN_get_phys_pos: consumable (102) raw random_num (-854500626)
                                        // The "raw random number" is converted to a random hold_time between 50ms - 150ms, in this case, 94ms.
[1591]  D:430.840 |A|070| (tMechIDS) FEATURE_ACUMEN_get_phys_pos: consumable (102) hold_time (94)
                                    // FW sends the SET SDA command: Command code = d2 (SET SDA); dwell_time = 005e (94 ms)
[1596]  D:ALOG 430.842 (tMechIDS) Device 0, address 60: Sending unwrapped command
[1597]  D:ALOG 430.842 (tMechIDS) d2005e
[1598]  D:ALOG 430.948 (tMechIDS) Device 0, address 60: Sending wrapped command
[1599]  D:ALOG 430.948 (tMechIDS) f566fca83ca664b468e932c930f88fc4efa25037fec5bceba3
                                        // Slot detect is concluded, return SDA A2D reading to higher-level code to interpret the physical position of the
acumen, if needed.
[1601]  D:431.080 |A|070| (tMechIDS) In FEATURE_ACUMEN_get_phys_pos, for consumable (102) _read_a2d returned value: (21)
```

39. In the above excerpt of the test logs of Exhibit FBD 10, in line [1596], a command from the printer controller to "device 0" at the address "60" (i.e. the black cartridge) can be seen that reads in hexadecimal code "d2005e".

40. The first hexadecimal digits – in this case "d2" – indicate the type of command to the chip – in this case a "SET SDA command", which tells the cartridge's chip that in response to the (first) command the voltage condition on the serial data bus is to be kept low for the time period specified in the command. The challenged embodiments I are designed to understand this command (and all further commands), given they are manufactured and marketed to function exclusively with HP printers and replace HP original cartridges and given that they actually do carry out the respective commands.

41. The specified time period in milliseconds is described in the hexadecimal string above by "005e" in hexadecimal notation – which corresponds to 94 ms (in decimal notation) for the exemplary black cartridge for Defendant I and by "004d" in hexadecimal notation. The above (first) command thus contains a time period, which is sent to the logic circuitry of the cartridge via the serial data bus interface.

ee. Features 13.5 and 13.6 - to generate a low voltage condition on the serial data bus (500) for a duration based on the time period, and after the duration, return to a default voltage condition on the serial data bus (500)

42. Furthermore, as part of its tests of the challenged embodiments I, Applicant was able to produce the graphs shown in Exhibits FBD 15 and FBD 16 by measuring the analog voltage on the I²C data bus using Test Setup B.

43. As can be seen from the graphs shown on page 41 of the application for provisional measures, in the challenged embodiments I, the analog voltage on the SDA line of the I²C bus (lowermost graph in the above depiction) is pulled down to low voltage (corresponding to a "low" condition of the digital SDA signal in the uppermost graph) for about 94 ms, namely, in the example provided for Defendant I, exactly 93.367864 ms. These 93.367864 ms are based on the time period specified in the first command (see mn. 42 above), given that the low voltage condition is generated for substantially the duration of the time period set out in the first command. Therefore, feature 13.5 (low voltage condition on the I²C bus for a duration based on the time period) is realised.

44. The graphs in the exemplary depiction also show that the voltage on the serial data bus returns to its default (high) condition after the specified time period has elapsed (cf. emphasis in red color in the right-hand side of the enlarged view), as required by feature 13.6.

45. In addition, based on the test results submitted by Exhibit FBD 15, the Applicant has demonstrated that cartridge chip's logic generates a low voltage condition on the SDA line of the I²C bus in response to a first command including a time period. For details, reference is made

to mn. 114 to 118 of the application for provisional measures.

ff. Feature 13.7 - wherein the logic (702, 702B) is configured to generate the low voltage condition for different durations based on respective different received time periods

46. The logic of the challenged embodiments is configured to generate the low-voltage condition for different durations based on different time periods received via different first commands.

47. Using Test Setup A, the Applicant observed another first command including a time period that differs from the time period included in the first command of feature 13.4. By opening and closing the HP printer's cartridge compartment, the HP printer checks again, if the cartridges are inserted in the correct slots of the cartridge compartment by sending another first command to the logic circuitry. This can be seen from Exhibits FBD 10 and FBD 11, by way of example for the black HP 937 cartridge of Defendant I:

```
                                    // Start slot detect timing challenge for BLACK supply
[9266]  D:1288.294 |A|070| (tMechIDS) FEATURE_ACUMEN_get_phys_pos: consumable (102) raw random_num (-2044830544)
                                    // The "raw random number" is converted to a random hold_time between 50ms - 150ms, in this case, 121ms.
[9268]  D:1288.294 |A|070| (tMechIDS) FEATURE_ACUMEN_get_phys_pos: consumable (102) hold_time (121)
                                  // FW sends the SET SDA command: Command code = d2 (SET SDA); dwell_time = 0079 (121 ms)
[9273]  D:ALOG 1288.294 (tMechIDS) Device 0, address 60: Sending unwrapped command
[9274]  D:ALOG 1288.294 (tMechIDS) d20079
[9275]  D:ALOG 1288.400 (tMechIDS) Device 0, address 60: Sending wrapped command
[9276]  D:ALOG 1288.400 (tMechIDS) f55cea077e2909f34edbb684952ec8c2d3a41ffd2fdc06b7ab
                                    // Slot detect is concluded, return SDA A2D reading to higher-level code to interpret the physical position of the
acumen, if needed.
[9278]  D:1288.558 |A|070| (tMechIDS) In FEATURE_ACUMEN_get_phys_pos, for consumable (102) _read_a2d returned value: (21)
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48. The new first command sent to "device 0" at the address "60" (i.e. the black cartridge) in this case reads in hexadecimal notation "d20079", whereby "0079" indicates a time period. The specified time period in milliseconds that corresponds to "0079" in hexadecimal notation is 121 milliseconds in decimal notation, which differs from the time period from the previously explained first command of 94 ms.

49. With regard to the further test results, reference is made to the application for provisional measures as well as Exhibits FBD 10, FBD 13 and FBD 15. Based on the submitted test results, the Applicant has demonstrated that different time periods included in the first command sent to the logic of the challenged embodiments result in the challenged embodiments' I logic assuming a low-voltage condition for different durations – in each case based on the time period that the respective first command provides.

gg. Feature 13.8 - without reference to a clock signal of the serial data bus (500)

50. In the challenged embodiments I, the low voltage condition is also generated independently of the clock signal.

51. As the Applicant has explained and demonstrated in a comprehensible manner, this is clear from the figures contained in the application for provisional measures that show the voltage signals A0 being pulled low for the duration. For the time period the voltage on the SDA-line is pulled low, there is no clock frequency on the bus, that is, the SCL-line is continuously high. Thus, the person skilled in the art will understand that the voltage must be pulled low without reference to a clock signal, because the clock signal is absent (see also the expert opinion, Exhibit FBD 9).

52. In addition, the Applicant has demonstrated through extensive testing that changing the clock frequency on the SCL line between 200 kHz and 100 kHz has no effect on the duration of the low voltage condition. In other words, even if the clock frequency is different, outside

of the low voltage duration, it has no effect on the low voltage duration. Therefore, the adaption of the low voltage condition is independent of the clock frequency. For further details of these tests, reference is made to the application for provisional measures (mn. 139 – 154) and the Exhibits referred to therein.

c. Validity

53. The validity of the patent in suit is reasonably certain.

54. As confirmed by the Court of Appeal, a sufficient degree of certainty regarding the validity of the patent in suit lacks if the Court considers it on the balance of probabilities to be more likely than not that the patent is invalid. The burden of presentation and proof for facts concerning the lack of validity of the patent in suit lies with the defendant (UPC_CoA_335/2023, Order of 26 February 2024 – NanoString/10x Genomics, see p. 26-27; UPC_CoA_182/2024, Order of 25 September 2024 – Mammut Sports v. Ortovox Sportartikel; UPC_CFI_213/2025 (LD Düsseldorf), Order of 10 July 2025, mn. 91 – Aesculap v Shanghai International Holding).

55. Based on these principles and taking into account Applicant's and Defendant's 1. previous submissions, the validity of the patent in suit is sufficiently secured.

56. Since Defendant 1. has not put forward any arguments against the validity of the patent in suit, there is no reason to doubt that the patent in suit is valid. This is all the more true given that the patent in suit has so far neither been subject of any national nullity proceedings nor any revocation action before the UPC.

C. BALANCE OF INTERESTS

57. Pursuant to Art. 62(2) UPCA and R. 211.3 RoP, the Court shall in the exercise of its discretion weigh up the interests of the parties and, in particular, take into account the potential harm for either of the parties resulting from the granting or refusal of the injunction.

58. The Court must also take the time factor into account. In particular, it must consider whether to await the proceedings on the merits or whether provisional measures are necessary (UPC_CoA_540/2024, Order of 24 February 2025, mn. 19 – Biolight v Light Guide; Order of 30 April 2025 – Insulet Corporation v EOFLow; UPC_CFI_213/2025 (LD Düsseldorf), Order of 10 July 2025, mn. 104 – Aesculap v. Shanghai International Holding).

59. Provisional measures are necessary, if a delay would cause irreparable damage to the patent proprietor, for example. However, such damage is not a necessary prerequisite for ordering provisional measures (UPC_CFI_182/2024, Order of 25 September 2024, mn. 237 – Mammut v Ortovox; UPC_CoA_540/2024, Order of 24 February 2025, mn. 21 – Bioletic v Light Guide; UPC_CoA_768/2024, Order of 30 April 2025, mn. 103 – Insulet Corporation v EOFlow; UPC_CFI_213/2025 (LD Düsseldorf), Order of 10 July 2025, mn. 105 – Aesculap v. Shanghai International Holding).

60. The need for provisional measures may arise from direct competition between the challenged embodiment and the patent proprietor's product (UPC_CoA_540/2024, Order of 24 February 2025, mn. 26 – Biolitec v Light Guide). In such situations, provisional measures may be justified if they are necessary to maintain the status quo prior to the alleged infringement until a decision is taken on the merits (UPC_CFI_182/2024, Order of 25 September 2024, mn. 238 – Mammut v Ortovox; UPC_CoA_540/2024, Order of 24 February 2025, mn. 28 – Biolitec v Light Guide; UPC_CFI_213/2025 (LD Düsseldorf), Order of 10 July 2025, mn. 106 – Aesculap

v. Shanghai International Holding; UPC_CFI_387/2025 (LD Hamburg), Order of 14 August 2025, mn. 136 – Dyson v. Dreame International). The need for the ordering of provisional measures may also arise from a change in the market situation from one in which only one product is available to one in which two competing products are on the market. Such a transition may lead not only to price pressure but also to lasting price erosion (UPC_CoA_523/2024, Order of 3 March 2024, mn. 93 – Sumi v Syngenta; UPC_CoA_768/2024, Order of 30 April 2025, mn. 104 – Insulet v EOFlow; UPC_CFI_213/2025 (LD Düsseldorf), Order of 10 July 2025, mn. 106 – Aesculap v. Shanghai International Holding).

61. Based on these principles, the necessary weighing of interests in the present case is in favour of the Applicant.

I. Urgency

62. When weighing up the interests, the Court takes into account any unreasonable delay in applying for provisional measures, as set out in R. 211.4 RoP in conjunction with R. 209.1(b) RoP. This is based on the fact that the patent proprietor's conduct shows that enforcing its rights is no longer urgent. In such a situation, there is no need to order provisional measures.

63. The urgency required for the order of provisional measures is only lacking if the injured party has pursued its claims so negligently and hesitantly that it can objectively be assumed that it has no interest in the rapid enforcement of its rights and it therefore does not appear appropriate to order provisional measures (UPC_CFI_347/2024 (LD Düsseldorf), Order of 31 October 2024, p. 42 – Valeo v Magna; UPC_CFI_2/2023 (LD Munich), Order of 19 September 2923, 10x Genomics v. NanoString; UPC_CFI_452/2024 (LD Düsseldorf), Order of 9 April 2024, p. 126 – Ortovox v Mammut).

64. According to R. 211.2 RoP, the Court may require the applicant to provide reasonable evidence to satisfy the Court with a sufficient degree of certainty that the applicant is entitled to commence the proceedings pursuant to Art. 47 UPCA, that the patent in question is valid and that the applicant's right is being infringed, or that such an infringement is imminent. In PI proceedings, the applicant must generally respond to such an order within a short period of time. Therefore, adequate preparation of the proceedings is required. Against this background, the applicant should only apply for a PI if it has reliable knowledge of all the facts that make legal action in PI proceedings promising, and can substantiate these facts. The applicant should prepare for all possible procedural situations that may arise, so that it can provide the Court with the requested information and documents, and successfully refute the opposing party's arguments. In principle, the applicant cannot be instructed to conduct the necessary investigations during ongoing proceedings or to retrospectively obtain the necessary documents. However, the applicant must not unnecessarily delay the proceedings. As soon as it become aware of the alleged infringement, it must investigate it and take the necessary measures for clarification. The applicant must also obtain the documents necessary to substantiate its claims. It must carefully initiate and complete the necessary steps at each stage in doing so (UPC_CFI_452/2023 (LD Düsseldorf), Order of 9 September 2024, mn. 128 – Ortovox v. Mammut; UPC_CFI_151/2024 (LD Hamburg), Order of 3 June 2026 – Ballinno v. Uefa; UPC_CFI_213/2025 (LD Düsseldorf), Order of 10 July 2025, mn. 110 – Aesculap v. Shanghai International Holding).

65. On this basis, the time limit within the meaning of R. 211.4 RoP is to be calculated from the

date on which the applicant became aware, or should have become aware of the infringement that would enable him, in accordance with R. 206.2 RoP, to file an application for provisional measures with a reasonable prospect of success. Thus, the decisive point in time is when the applicant has, or should have had, after exercising due diligence, the necessary facts and evidence within the meaning of R. 206.2 (d) RoP (UPC_CoA_182/2024, Order of 25 September 2024 – Ortovox v Mammut; UPC_CoA_446/2025, Order of 13 August 2025, mn. 87 – Boeringer Ingelheim v Zentiva).

66. Based on these principles, the Applicant in the present case did not wait unreasonably long time before filing its application for the order of provisional measures.

67. According to Applicant's submissions, which have not been contested by Defendant 1., the Applicant became aware of the fact that Defendant 1. may offer the challenged embodiments that might infringe the patent in suit, through a listing by Defendant 1. on its website (www.toneroffice.de) on 10 April 2025. Immediately, after having discovered these offers on the respective websites, the Applicant consulted its internal and external legal counsel, who ordered samples of the offered printer cartridges on the same day to assess whether Defendant 1. would not only offer but sell these cartridges in the UPC territory which were received by Applicant's representative on 15 April 2025. After unpacking, photographing and categorising the printer cartridges, Applicant's external legal counsel sent the samples to the Applicant's laboratory for testing. They were received by the Applicant on 5 May 2025. There, the Applicant immediately started to prepare the tests to examine the challenged embodiments in detail for possible infringement of Applicant's rights. In the laboratory in Vancouver, the printer cartridges were reviewed and analysed by the Applicant and its findings subsequently discussed by the team of internal and external counsel. With respect to Defendant 1., the Applicant concluded that the challenged embodiments I, offered and sold by Defendant 1., infringe the patent in suit. The Applicant hat compiled the corresponding analysis and evidence necessary to file an application for provisional measures against Defendant 1. as of 28 May 2025.

68. The Applicant has submitted its application for provisional measures just approximately two weeks later, on 13 June 2025. Therefore, there is no indication that the Applicant acted hesitantly.

II. Necessity of provisional measures

69. Based on the Applicant's undisputed submissions, the order of provisional measures is also necessary.

70. Applicant and Defendant 1. are direct competitors on the market for printer cartridges compatible with (certain) HP printers. Therefore, Defendant's 1. offer and sale of the challenged embodiments I causes serious and unjustified harm to Applicant's market position that intensifies each day the patent-infringing sales are allowed to continue.

71. Allowing Defendant 1. to stay on the market for the duration of the main proceedings will intensify the loss of turnover, revenue and market share that cannot be adequately compensated through damage claims and might even lead to permanent loss of market share for the Applicant.

72. As the Applicant has stated, Defendant 1. offers the challenged embodiments I for a signifi-

cantly lower price than the Applicant's products. This increases the likelihood that the continued sales of the challenged embodiments will result in a loss of market share of the Applicant. Therefore, Defendant 1. effectively undercuts Applicant's market position and incentivises consumers to shift their purchasing preferences. Customers might choose the challenged embodiments I over original HP cartridges or those of other competitors for HP permanently, if the challenged embodiments I will stay on the market for a longer period of time, in particular for the entire duration of the main proceedings. Such customers might, based on the lower price of the challenged embodiments I, look for further illegal clone cartridges from other sources once the Defendant's products become unavailable after the duration of the main proceedings as they might have become accustomed to purchasing illegal clone cartridges over a long timeframe. If the Applicant, however, is able to exclude competitors that ignore and violate Applicant's patent rights from the market in a shorter period of time, e.g. through these preliminary proceedings, it might be able to win these customers back that might come to realise that the clone cartridges they purchased were only marketed because they ignore intellectual property rights.

73. By submitting relevant figures and forecasts, the Applicant has explained in detail that it faces the threat of significant damage if the contested products continue to be offered and distributed. To emphasise this, the Applicant further stated that illegal resellers will virtually flood the market, if the Applicant does not defend its rights at an early stage when the first illegal rebuilds, like the challenged embodiments I, are marketed. Since the Applicant first became aware of Defendants marketing of the challenged embodiments I, Applicant noticed already a flurry of resellers trying to enter the market for 924 and 937 cartridges with (at least in parts) offerings of illegal clones.

74. Finally, the Applicant has correctly pointed out that Defendant's 1. actions also at least threaten to cause significant reputational harm to the Applicant. Customers might conclude that the challenged embodiments, which might be of lower quality, might cause compatibility problems with HP printers and might overall not create the print results a customer expects from an HP printer, are associated with or somehow authorised by HP. Customers might arrive at this conclusion given that the challenged embodiments are advertised with certain HP printers, even though they are sold not by HP itself but unrelated third parties. Customers that purchase the challenged embodiments and are disappointed by the product they ultimately receive, might consider moving away from HP products when they purchase their next printer or might even associate the bad experience with the HP-brand more generally.

75. To counteract this, provisional measures must be ordered. It would be unreasonable to expect the Applicant to wait for a decision on the merits.

D. LEGAL CONSEQUENCES

76. The following applies to the legal consequences for which the Applicant is applying.

1. Preliminary Injunction

77. In exercising its discretion (R. 209.2 RoP), the Panel considers the grant of a preliminary injunction to be appropriate and justified (Art. 62(1), 25(a) UPCA). Only a preliminary injunction takes into account the Applicant's interest in the effective enforcement of the patent in suit. For the reasons stated above, Defendant's 1. interest in continuing distribution must

take a back seat.

2. Information

78. Furthermore, an obligation to provide information may also be ordered in the context of provisional measures, provided that there is an urgent interest and these measures are proportionate (UPC_CoA_382/2024, Order of 14 February 2025, mn. 160 - 164 – Abbott v Sibio; UPC_CoA_768/2024, Order of 30 April 2025, mn. 129 - 132 – Insulet v EOFlow; UPC_CFI_213/2025 (LD Düsseldorf), Order of 10 July 2025, mn. 123 – Aesculap v Shanghai International Holding). This is true of the information regarding the origin and distribution channels of the challenged embodiment I. This information enables the Applicant to take the necessary steps to prevent any further infringements within the scope of the UPCA and the patents in question.

3. Penalty payments

79. The penalty payments sought by the Applicant are based on R. 354.3 RoP.

80. With the number of products or the number of days, one variable for calculating penalty payments is already determined. However, setting a maximum limit per product or per day gives the Court the necessary flexibility to consider the infringer's behaviour in the event of an infringement and to set an appropriate penalty payment in accordance with R. 354.4 RoP.

4. No enforcement security

81. Pursuant to R. 211.5 RoP, the Court may require the provision of adequate security to ensure that the Defendant is adequately compensated for the damage which it is likely to suffer if the Court revokes the order for provisional measures.

82. A security order is not dependent on a request by one of the parties. If provisional measures are ordered without the defendant having been heard, the Court shall order the applicant to provide appropriate security, unless there are special circumstances that preclude this (R. 213.2 RoP, second sentence). While security is therefore normally ordered in ex-parte situations, the Court has discretion when the Defendant has been heard (inter partes, see R. 211.5 RoP, first sentence, „may", UPC_CoA_523/2024, Order of 3 March 2025, mn. 110 - 113 – Sumi Agro v Syngenta; UPC_CFI_213/2024 (LD Düsseldorf), Order of 10 July 2025, mn. 131 – Aesculap v. Shanghai International Holding).

83. In the present case, Defendant 1. has stated that it does not intend to challenge the application for provisional measures. If Defendant 1. does not present arguments against the application for provisional measures to the Court, and if there are no apparent grounds for ordering security, there is no reason to impose this burden on the Applicant.

E. Partial withdrawal

84. The Applicant has applied to a partial withdrawal regarding its claims for an interim award of costs, insofar as Defendant 1. is concerned.

85. According to Defendant 1., this partial withdrawal is part of a settlement agreed by the Parties out of the Court. Therefore, the Court sees no reason not to allow this partial withdrawal.

ORDER:

With respect to Defendant 1., the Court orders the following:

A.

1. Defendant 1. is ordered to refrain from making, offering, placing on the market, using or possessing for the purposes mentioned, or importing or storing the product for those purposes in the territories of Belgium, Denmark, France, Germany, Italy, the Netherlands and Sweden

> Logic circuitry (204, 700, 700B, 812) comprising one or more logic circuits for association with a replaceable print apparatus component (104, 200, 514) comprising:
>
> logic (702, 702B) and,
>
> an I^2C serial data bus interface (704, 704B),
>
> wherein the serial data bus interface (704, 704B) is to interface with a serial data bus (500) of a print apparatus (102, 300), and,
>
> characterized in that, the logic (702, 702B) is, in response to a first command sent to the logic circuitry via the serial data bus (500) connected to the serial data bus interface (704, 704B), the first command including a time period,
>
> to generate a low voltage condition on the serial data bus (500) for a duration based on the time period, and
>
> after the duration, return to a default voltage condition on the serial data bus (500),
>
> wherein the logic (702, 702B) is configured to generate the low voltage condition for different durations based on respective different received time periods,
>
> and without reference to a clock signal of the serial data bus (500).

2. Defendant 1. is ordered to provide counsel for Applicant within 4 weeks after service of the order rendered in this matter, with a written statement, substantiated with appropriate documentation of:

   a. the origin and distribution channels of the infringing devices referred to under 1. (including the full names and addresses of the legal entities that are involved);

   b. the identity of any party involved in the production or distribution of the infringing devices referred to under 1. (including the full names and addresses of the legal entities that are involved).

3. Defendant 1. is ordered to pay to the Court penalty payments of up to € 1 000 per infringing device made, offered, placed on the market, used or possessed for the pur-

poses mentioned, or imported or stored for those purposes in the territories of Belgium, Denmark, France, Germany, Italy, the Netherlands and Sweden or up to € 250 000 per day for each day Defendant 1. fails to comply with the order under 1. above, and penalty payments up to € 100 000 per day for each day Defendant 1. fails to comply with the order under A.2. above, with a part of a day counting as an entire day.

B.
The above orders are effective and enforceable immediately.

C.
A uniform decision on costs will be made at a later stage, once an order has been issued on the application for provisional measures against Defendant 2.

D.
If proceedings on the merits are not started within a period not exceeding 31 calendar days or 20 working day whichever is longer from the time of service upon Defendant 1., the Court may order, upon request of Defendant 1., that the present order be revoked or otherwise ceases to have effect (Art. 62(5), 60(8) UPCA, R. 213.1 RoP).

E.
The Applicant's application to withdraw motion 4., which states that the Defendants should be ordered to pay the interim award of costs of the proceedings, for both patents in suit to the extent that Defendant 1. is concerned, is permitted.

Issued in Düsseldorf on 17 October 2025
NAMES AND SIGNATURES

Presiding Judge Thomas	Ronny Thomas Digital unterschrieben von Ronny Thomas Datum: 2025.10.17 15:22:17 +02'00'
Legally qualified judge Dr Schumacher	Jule Kathrin Schumacher Digital unterschrieben von Jule Kathrin Schumacher Datum: 2025.10.17 15:24:12 +02'00'
Legally qualified judge Lopes	Rute Alexandra Da Silva Sabino Lopes Assinado de forma digital por Rute Alexandra Da Silva Sabino Lopes Dados: 2025.10.19 21:06:04 +01'00'
For the sub-registrar	HEIKE BETTINA ELVIRA Strysio Digital unterschrieben von HEIKE BETTINA ELVIRA Strysio Datum: 2025.10.17 15:29:13 +02'00'

Notice on the right on appeal:

Defendant 1. may bring an appeal against the present order within 15 days of service of this order (Art. 73(2)(a), 62 UPCA, R. 220.1(c), 224.2(b) RoP).

Information about enforcement (Art. 82 UPCA, Art. Art. 37(2) UPCS, R. 118.8, 158.2, 354, 355.4 RoP):

An authentic copy of the enforceable order will be issued by the Deputy-Registrar upon request of the enforcing party, R. 69 RegR.