Decision

of the Court of First Instance of the Unified Patent Court
Local Division Munich
delivered on 11 March 2026

<u>HEADNOTES</u>

The "attacked embodiment" is regularly determined by the factual design of a certain product or a process with regard to the features of the invoked patent claim as asserted in the Statement of Claim. This can be a specific product determined, for example, by its product name, product sheet and technical design. However, the attacked embodiment may also comprise all products that generally have the technical features specified by the Claimant, which allegedly realise the technical teaching of the patent claim. This may also include products unknown to the Claimant or, in the case of an injunction, future products insofar as they essentially correspond to the features of the product presented by the Claimant in his Statement of Claim, which he considers decisive for the patent infringement. In such a case, it is usually sufficient if the Claimant has exemplified the infringement on a sample of the attacked embodiment.

Network System Technologies LLC, legally represented by its Chief Executive Officer (CEO) Warren Hurwitz,533 Congress Street, Portland, ME 04101, United States of America,

represented by:	Dr. Thomas Gniadek, Hoffmann Eitle Patent- und Rechtsanwälte PartmbB, Arabellastraße 30, 81925 Munich.

DEFENDANTS AND COUNTERCLAIMANTS

3. **Qualcomm Incorporated**, legally represented by its Chief Executive Officer (CEO) Cristiano Amon, 5775 Morehouse Drive, San Diego, CA 92121, United States of America,

4. **Qualcomm Technologies, Inc.**, legally represented by its Chief Executive Officer (CEO) Cristiano Amon, 5775 Morehouse Drive, San Diego, CA 92121, United States of America,

5. **Qualcomm Germany GmbH**, legally represented by its Chief Executive Officer (CEO) Hamid-Reza Nazeman, Anzinger Straße 13, 81671 Munich, Germany,

represented by:	Johannes Heselberger, Bardehle Pagenberg Partnerschaft mbB, Prinzregentenplatz 7, 81675 Munich.

PATENT AT ISSUE

European Patent n° EP 1 552 399

PANEL/DIVISION

Panel 2 of the Local Division Munich

DECIDING JUDGE/S

This decision has been issued by Presiding Judge U. Voß, legally qualified Judge D. Voß (Judge-rapporteur), legally qualified Judge P. Perrotti and technically qualified Judge A. Scilletta

LANGUAGE OF THE PROCEEDINGS

English

SUBJECT-MATTER OF THE PROCEEDINGS

Infringement action and Counterclaim for revocation

16 December 2025

SUMMARY OF FACTS

1   The subject matter of these proceedings is an Infringement action brought by the Claimant against the Defendants 3) to 5) and a Counterclaim for revocation brought by the Defendants 3) to 5) (hereinafter: Defendants). The proceedings are part of an international patent dispute between the Claimant and the Defendants. Claimant has also filed a U.S. civil action in the United States District Court for the Western District of Texas (Austin Division), Civil Action No. 1:22-cv-1331 against the Defendants 3) and 4) and Arteris, Inc. (SoD12)

2   Originally, the Claimant also sued Samsung Electronics Co., Ltd. and Samsung Semiconductor Europe GmbH (Defendants 1) and 2)), two companies belonging to the Samsung Group, which also filed a Counterclaim for revocation. On 6 September 2024, at request of the Claimant and the Defendants 1) and 2), the Court permitted the withdrawal of the Infringement action and the Counterclaim for revocation in relation to Defendants 1) and 2) respectively.

3   The basis for the present Infringement action and the object of the related Counterclaim for revocation is the European Patent EP 1 552 399 (Exhibit P 1; hereinafter: patent-in-suit) regarding an integrated circuit and a method for establishing transactions. The application of the patent-in-suit was filed by Koninklijke Philips Electronics N.V. on 7 October 2003, claiming priority of the European application No. 02079196 dated 8 October 2002. The application of the patent-in-suit was published on 13 July 2005, the mention of the grant of the patent on 26 September 2007. The patent-in-suit was validated in a number of jurisdictions including France and Germany, where it remained in force until the patent term expired on 7 October 2023. The patent-in-suit was opted out of the competence of the UPC on 25 May 2023, but this opt-out was subsequently withdrawn on 20 December 2023. A preliminary objection based on the allegedly invalid withdrawal of the opt-out was rejected by order dated 25 August 2025.

4   Claimant asserts claim 1 of the patent-in-suit which reads as follows:

> "Integrated circuit comprising a plurality of processing modules (M; I; S; T) and a network (N; RN) arranged for providing at least one connection between a first (M;I) and at least one second module (S;T),
>
> wherein the at least one connection comprises a set of communication channels each having a set of connection properties, the connection properties of the different communication channels of said connection being adjustable independently,

wherein said connection supports transactions comprising outgoing messages from the first module (M; I) to the second module (S;T) and/or return messages from the second module (S;T) to the first module (M;I) the integrated circuit further comprising:

> at least one communication managing means (CM) for managing the communication between different modules (M;I;S;T) and
>
> at least one resource managing means (RM) for managing the resources of the network (N)
>
> characterized in that,
>
> said first module (M;I) is adapted to issue a request (REQ) for a connection with at least one of said second modules (S;T) to said communication managing means (CM),
>
> said communication managing means (CM) is adapted to forward said request (REQ) for a connection with communication channels each having a specific set of connection properties to said resource managing means (RM),
>
> said resource managing means (RM) is adapted to determine whether the requested connection based on said communication channels with said specific connection properties are available, and to respond the availability of the requested connection to said communication managing means (CM),
>
> wherein a connection between the first (M;I) and second module (S;T) is established based on the available properties of said communication channels of said connection."

5   With regard to the dependent claims 2, 3 and 4 of the patent-in-suit, the infringement of which is alternatively asserted by the Claimant, it is referred to the patent specification (Exhibit P 1).

6   Originally, the actual and registered proprietor of the patent-in-suit was Koninklijke Philips Electronics N.V. (hereinafter: "Philips"). On 24 June 2022, the Claimant and Philips concluded a Patent Purchase Agreement ("PPA", submitted as Exhibit P 25) according to which the patent-in-suit and an associated integrated circuits patent portfolio should be transferred from Philips to the Claimant. Corresponding Patent Assignments ("PAs", submitted as Exhibit P 26) covering the French and the German Part of the patent-in-suit were signed on 5 July 2022. Transfer and change of ownership were recorded in the EPO patent register on 8 May 2023 as well as in the national patent registers of France and Germany. An excerpt of these registers has been submitted as Exhibit P 2 – P 5.

7   The Claimant is a patent licensing company that seeks to license the patent-in-suit and the corresponding patent portfolio to semiconductor companies and companies that deploy those semiconductors.

8   Defendant 3) creates and designs semiconductors, software and services related to wireless technology.

9   Defendant 4) is a subsidiary of Defendant 3) and operates, along with its subsidiaries, substantially all of Qualcomm's engineering, research and development functions, and substantially all of their products and services businesses, including the QCT semiconductor business. The product range of Defendant 4) includes, among other things, Snapdragon and Qualcomm branded products.

10   Defendant 5) is a subsidiary of Defendant 3) and Defendant 4).

11   Arteris, Inc. is a technology firm developing, inter alia, NoC technology (hereinafter: Arteris). According to an Arteris, Inc. press release and other news sources from 2013, Defendant 4) hired approximately 43 Arteris engineers and acquired certain Arteris SoC technology and IP in 2013, licensed such SoC technology and IP back to Arteris, and provided improvements to, and engineering support for, such SoC technology and IP to Arteris.

12   The Claimant is objecting to integrated circuits (ICs) offered and distributed by the Defendants 3) to 5). These ICs including Systems on Chip (SoCs), have Network on Chip (NoC) interconnects (hereinafter: Qualcomm NoC ICs), i.e. they comprise a network as on-chip interconnect. According to the Claimant's submission, these NoCs include (but are not limited to) a NoC designed using tools developed by Arteris and/or derivatives thereof (hereinafter: Arteris NoC). For the further explanation of the Arteris NoC, the Claimant refers to Chapter 11 of the book titled 'Networks-on-Chips Theory and Practice' (submitted as Exhibit P 11; hereinafter: Arteris NoC Chapter).

13   According to this, the Arteris NoC is a network on board of the IC which allows the modules of the IC, also referred to as functional blocks, IP blocks or nodes, to communicate with each other. Network interface units (NIUs) and routers/switches are key components of the Arteris NoC, which also makes use of a specific network protocol called NoC Transaction and Transport Protocol (NTTP) proposed by Arteris. This protocol is packet based and adopts a three-layered approach with transaction, transport and physical layers. It defines the rules and conventions that apply as data is transferred over the network. Requests from a (master) module are sent through the master NIU to the NoC from which they are routed to the NIU of a (slave) module. Response packets from the (slave) module are delivered vice versa through the slave NIU via the network to the requesting master NIU which forwards them to the (master) module. The NIUs create the packets. They translate between third-party protocols like AHB, OCP and AXI used by the modules and the NTTP protocol. For further details of the Arteris NoC, reference is made to the Arteris NoC chapter (Exhibit P 11).

     The Claimant refers to Qualcomm NoC ICs that include Arteris NoC as "infringing embodiment II" (whereas the term infringing embodiment I is referred to products of Samsung). The following products of the Defendants 3) and 4) are examples of the infringing embodiments II:

14   The Snapdragon Mobile Processors, Platforms and Modems, including:
     • Snapdragon 8 Gen 3   • Snapdragon 8 Gen 2   • Snapdragon 8+ Gen 1

- Snapdragon 8 Gen 1
- Snapdragon 7+ Gen 2
- Snapdragon 7 Gen 1
- Snapdragon 6 Gen 1
- Snapdragon 4 Gen 2
- Snapdragon 4 Gen 1
- Snapdragon S4 Play
- Snapdragon S4 Pro
- Snapdragon S4 Plus
- Snapdragon S4 Prime
- Snapdragon S3
- Snapdragon S2
- Snapdragon S1
- Snapdragon 888+
- Snapdragon 888
- Snapdragon 870
- Snapdragon 865+
- Snapdragon 865
- Snapdragon 860
- Snapdragon 855+
- Snapdragon 855
- Snapdragon 845
- Snapdragon 835
- Snapdragon 821
- Snapdragon 820
- Snapdragon 810
- Snapdragon 808
- Snapdragon 805
- Snapdragon 801
- Snapdragon 800
- Snapdragon 782G
- Snapdragon 782
- Snapdragon 780G
- Snapdragon 780
- Snapdragon 778G+
- Snapdragon 778G
- Snapdragon 768G
- Snapdragon 768
- Snapdragon 765G
- Snapdragon 765
- Snapdragon 750G

- Snapdragon 750
- Snapdragon 732G
- Snapdragon 732
- Snapdragon 730G
- Snapdragon 730
- Snapdragon 720G
- Snapdragon 720
- Snapdragon 712
- Snapdragon 710
- Snapdragon 695
- Snapdragon 690
- Snapdragon 685
- Snapdragon 680
- Snapdragon 678
- Snapdragon 675
- Snapdragon 670
- Snapdragon 665
- Snapdragon 662
- Snapdragon 660
- Snapdragon 652
- Snapdragon 650
- Snapdragon 636
- Snapdragon 632
- Snapdragon 630
- Snapdragon 626
- Snapdragon 625
- Snapdragon 617
- Snapdragon 616
- Snapdragon 615
- Snapdragon 610
- Snapdragon 600
- Snapdragon 480+
- Snapdragon 480
- Snapdragon 460
- Snapdragon 450
- Snapdragon 439
- Snapdragon 435
- Snapdragon 430
- Snapdragon 429
- Snapdragon 427
- Snapdragon 425

- Snapdragon 415
- Snapdragon 412
- Snapdragon 410
- Snapdragon 400
- Snapdragon 215
- Snapdragon 212
- Snapdragon 210
- Snapdragon 208
- Snapdragon 200
- Snapdragon X75
- Snapdragon X72
- Snapdragon X70
- Snapdragon X65
- Snapdragon X60
- Snapdragon X55
- Snapdragon X50
- Snapdragon X35
- Snapdragon X20
- Snapdragon X24
- Snapdragon X16
- Snapdragon X15
- Snapdragon X12
- Snapdragon X7
- Snapdragon X5
- MDM9625
- MDM9615
- MDM9225
- MDM9215
- MDM9600
- MDM8225
- MDM9200
- MDM9207-1
- MDM9206
- MDM8215
- MDM8220
- MDM6600
- MDM8200A
- MDM6270
- MDM6200
- 9205

15 The Snapdragon Mobile Compute Processors, including:
- Snapdragon 835 Mobile PC Platform
- Snapdragon 850 Mobile PC Platform

- Snapdragon 7c Compute Platform
- Snapdragon 7c Gen 2 Compute Platform
- Snapdragon 7c+ Gen 3 Compute Platform
- Snapdragon 8c Compute Platform
- Snapdragon 8cx Compute Platform
- Snapdragon 8cx Gen 2 5G Compute Platform
- Snapdragon 8cx Gen 3 Compute Platform

16 The Snapdragon Wearable Processor, including:
- Snapdragon Wear 1100
- Snapdragon Wear 1200
- Snapdragon Wear 2100
- Snapdragon Wear 2500
- Snapdragon Wear 3100
- Snapdragon Wear 4100
- Snapdragon Wear 4100+
- Snapdragon W5
- Snapdragon W5+ Gen 1

17 The Snapdragon Automotive Processors, including:
- Snapdragon 602A
- Snapdragon 820A
- Snapdragon 855A

18 The Snapdragon Embedded Processors, including:
- Snapdragon 410E
- Snapdragon 600E
- Snapdragon 800
- Snapdragon 810
- Snapdragon 820E

19 The Qualcomm Vision Intelligence Processors, including:
- QSC603
- QSC605

20 The Qualcomm Home Hub and Smart Audio Processors, including:
- APQ8009
- APQ8017
- APQ8053
- QSC403
- QSC404
- QSC405
- QSC407

21 The Qualcomm Extended Reality (XR) Processors, including:
- Snapdragon XR1
- Snapdragon XR2

22 The Qualcomm Gaming Processors, including:
- Snapdragon G3x Gen 1

23 Other Qualcomm Processors, including:

• QSC1100	• MSM6000	• MSM6260
• QSC6010	• MSM6025	• MSM6275
• QSC6020	• MSM6050	• MSM6280
• QSC6030	• MSM6100	• MSM6280A
• QSC6240	• MSM6125	• MSM6800A
• QSC6245-1	• MSM6150	• MSM6575
• QSC6055	• MSM6175	• MSM6550
• QSC6065	• MSM6225	• MSM6550A
• QSC6260-1	• MSM6250	• MSM6800
• QSC6270	• MSM6250A	• MSM6500
• QSC6075	• MSM6245	• MSM7200
• QSC6085	• MSM6255	• MSM7200A

- MSM7201
- MSM7500
- MSM7500A

- MSM7600
- MSM7850
- Qualcomm 205

- Qualcomm 215

24 The Claimant also objects to Samsung Galaxy smartphones, chromebooks, laptops and tablets which contain various models of the "infringing embodiments II" and are offered, imported and sold throughout Europe, inter alia in Germany and France, by the former Defendants 1) and 2). The Claimant designates these products as "infringing embodiment IV" (whereas the term infringing embodiment III referred to products of Samsung containing the infringing embodiment I) and lists the following products as examples for the "infringing embodiment IV":

25 Samsung Galaxy S-Series smartphones:
- Samsung Galaxy S23 Ultra
- Samsung Galaxy S23 Plus
- Samsung Galaxy S23
- Samsung Galaxy S22 Ultra 5G
- Samsung Galaxy S22 Ultra
- Samsung Galaxy S22 Plus
- Samsung Galaxy S22 5G
- Samsung Galaxy S22+ 5G
- Samsung Galaxy S22
- Samsung Galaxy S21 Ultra 5G
- Samsung Galaxy S21+
- Samsung Galaxy S21+ 5G
- Samsung Galaxy S21 5G
- Samsung Galaxy S21 Fan Edition 5G
- Samsung Galaxy S20 Ultra 5G
- Samsung Galaxy S20 Ultra
- Samsung Galaxy S20+ 5G
- Samsung Galaxy S20 5G

- Samsung Galaxy S20 FE 5G
- Samsung Galaxy S20 FE
- Samsung Galaxy S20+
- Samsung Galaxy S20
- Samsung Galaxy S10 5G
- Samsung Galaxy S10+
- Samsung Galaxy S10e
- Samsung Galaxy S10 Lite
- Samsung Galaxy S10
- Samsung Galaxy S9+
- Samsung Galaxy S9
- Samsung Galaxy S8+
- Samsung Galaxy S8 Active
- Samsung Galaxy S8
- Samsung Galaxy S7 Edge
- Samsung Galaxy S7 Active
- Samsung Galaxy S7
- Samsung Galaxy S Light Luxury

26 Samsung Galaxy A-Series smartphones:
- Samsung Galaxy A90 5G
- Samsung Galaxy A80
- Samsung Galaxy A73 5G
- Samsung Galaxy A72
- Samsung Galaxy A71 5G
- Samsung Galaxy A71
- Samsung Galaxy A70s
- Samsung Galaxy A70
- Samsung Galaxy A60
- Samsung Galaxy A52s 5G
- Samsung Galaxy A52 5G

- Samsung Galaxy A52
- Samsung Galaxy A51 5G
- Samsung Galaxy A42
- Samsung Galaxy A23 5G
- Samsung Galaxy A23
- Samsung Galaxy A20s
- Samsung Galaxy A11
- Samsung Galaxy A9 Pro
- Samsung Galaxy A9
- Samsung Galaxy A8 Star
- Samsung Galaxy A8s

- Samsung Galaxy A6+
- Samsung Galaxy A6s

- Samsung Galaxy A02s
- Samsung Galaxy A01

27 Samsung Galaxy M-Series smartphones:
- Samsung Galaxy M52 5G
- Samsung Galaxy M51
- Samsung Galaxy M42 5G
- Samsung Galaxy M40

- Samsung Galaxy M23
- Samsung Galaxy M11
- Samsung Galaxy M02s
- Samsung Galaxy M01

28 Samsung Galaxy J-Series smartphones:
- Samsung Galaxy J8
- Samsung Galaxy J7 V
- Samsung Galaxy J6+
- Samsung Galaxy J4+

- Samsung Galaxy J4 Core
- Samsung Galaxy J3
- Samsung Galaxy J2 Pro
- Samsung Galaxy J2 Core

29 Samsung Galaxy Note-Series smartphones:
- Samsung Galaxy Note20 Ultra 5G
- Samsung Galaxy Note20 Ultra
- Samsung Galaxy Note20 5G
- Samsung Galaxy Note20
- Samsung Galaxy Note10+ 5G
- Samsung Galaxy Note10+

- Samsung Galaxy Note10 5G
- Samsung Galaxy Note10
- Samsung Galaxy Note9
- Samsung Galaxy Note8
- Samsung Galaxy Note7

30 Samsung Galaxy F-Series smartphones:
- Samsung Galaxy F52 5G
- Samsung Galaxy F23

- Samsung Galaxy F02s

31 Samsung Galaxy Z-Series smartphones:
- Samsung Galaxy Z Flip5
- Samsung Galaxy Z Flip4
- Samsung Galaxy Z Flip3 5G
- Samsung Galaxy Z Flip 5G

- Samsung Galaxy Z Flip
- Samsung Galaxy Z Fold 4
- Samsung Galaxy Z Fold3 5G
- Samsung Galaxy Z Fold2 5G

32 Samsung Galaxy Fold/Folder-Series smartphones:
- Samsung Galaxy Fold 5G
- Samsung Galaxy Fold

- Samsung Galaxy Folder2

33 Other Samsung Galaxy smartphones:
- Samsung Galaxy C7
- Samsung Galaxy Quantum 2

- Samsung Galaxy On7
- Samsung Galaxy Xcover6

34 Samsung Galaxy Book Chromebooks and Laptops:
- Samsung Galaxy Book Go 5G
- Samsung Galaxy Book Go

- Samsung Galaxy Book S LTE

35 Samsung Galaxy Tab-Series Tablets:

- Samsung Galaxy Tab S9 Ultra
- Samsung Galaxy Tab S8 Ultra
- Samsung Galaxy Tab S8+
- Samsung Galaxy Tab S8
- Samsung Galaxy Tab S7 FE
- Samsung Galaxy Tab S7+
- Samsung Galaxy Tab S7
- Samsung Galaxy Tab S6 5G
- Samsung Galaxy Tab S6 Lite
- Samsung Galaxy Tab S6
- Samsung Galaxy Tab S5e
- Samsung Galaxy Tab S4 10.5
- Samsung Galaxy Tab S3 9.7
- Samsung Galaxy Tab S2 9.7
- Samsung Galaxy Tab S2 8.0
- Samsung Galaxy Tab A7 10.4
- Samsung Galaxy Tab A 8.0
- Samsung Galaxy Tab A 10.5
- Samsung Galaxy Tab Active4 Pro
- Samsung Galaxy Tab Active Pro

36 The Claimant requests:

I. The Defendants are ordered,

1. with regard to products in the territories of the ███████ ████████ and/or the ███████ █████████ ██████████ comprising an

integrated circuit comprising

a plurality of processing modules and a network arranged for providing at least one connection between a first and at least one second module,

wherein the at least one connection comprises a set of communication channels each having a set of connection properties, the connection properties of the different communication channels of said connection being adjustable independently,

wherein said connection supports transactions comprising outgoing messages from the first module to the second module and/or return messages from the second module to the first module

the integrated circuit further comprising:

at least one communication managing means for managing the communication between different modules and

at least one resource managing means for managing the resources of the network characterized in that,

said first module is adapted to issue a request for a connection with at least one of said second modules to said communication managing means,

said communication managing means is adapted to forward said request for a connection with communication channels each having a specific set of connection properties to said resource managing means,

said resource managing means is adapted to determine whether the requested connection based on said communication channels with said specific connection properties are available, and to respond the availability of the requested connection to said communication managing means,

wherein a connection between the first and second module is established based on the available properties of said communication channels of said connection,

(direct infringement of claim 1),

alternatively and in particular if

said communication managing means is adapted to reject establishing a connection based on the available connection properties when the available connection properties are not sufficient to perform the requested connection between said first and second module,

(direct infringement of dependent claim 2),

alternatively and in particular if

said communication managing means is adapted to request a reset of the connection between said first and second module, when said modules have successfully performed their transactions,

(direct infringement of dependent claim 3),

alternatively and in particular if

the integrated circuit further comprising:

at least one network interface means, associated to each of said modules, for managing the communication between said modules and said network,

(direct infringement of dependent claim 4),

which have been put on the market since the date of publication and mention of the grant of EP 1 552 399 B1 on 26 September 2007 until its expiry on 7 October 2023, at their own expense, to

a. recall the aforesaid products from the channel of commerce by requesting in writing the respective commercial customers in possession of the infringing products to return them to the Defendants, with reference to the fact that in the judgement to be designated the court addressed has found an infringement of the European Patent EP 1 552 399 B1, whereby the commercial customers are promised that in the event that the infringing products are returned, they will be refunded the purchase price already

paid, if any, as well as the transport or shipping costs incurred as a result of the return, including any customs and storage costs,

b.   definitely remove the aforesaid products from the channel of commerce by taking back the recalled products, and

c.   hand over the aforesaid products in their direct or indirect possession or ownership to a bailiff to be appointed by the Plaintiff for destruction at the Defendants' expense or, at their option, to destroy the aforesaid products themselves or, at their option, to deprive the aforesaid products of its infringing property by removing and destroying the inbuilt infringing means;

2.   to inform the Plaintiff of

a.   the origin and distribution channels of the products referred to in section I.1. which have been put on the market since 26 October 2007 until 7 October 2023,

b.   the quantities produced, manufactured, delivered, received or ordered, as well as the price obtained for the products referred to in section I.1. which have been put on the market since 26 October 2007 until 7 October 2023, and

c.   the identity of any third person involved in the production or distribution of the products referred to in section I.1. which have been put on the market since 26 October 2007 until 7 October 2023;

3.   to pay to Plaintiff an interim award of damages in an amount at the discretion of the Court.

II.   Each individual failure to comply with any order pursuant to sections I.1. to I.3. will render the respective Defendant liable to pay to the Court a possibly repeated penalty of up to EUR 250,000.00 per day for each day the respective Defendant fails to comply.

III.   The Defendants are liable for all damages resulting from the patent infringement as specified under section I.1. since 19 October 2007 until 4 July 2023 in the territories of the French Republic, the Federal Republic of Germany and the United Kingdom of Great Britain and Northern Ireland.

IV.   The Plaintiff is permitted, at Defendants' expense, to display the decision and publish it in full or in part in a daily newspaper with nationwide circulation in each of the territories referred to in section I.1.

V.   The Defendants are to bear the legal costs jointly and severally.

VI. The aforesaid orders are immediately enforceable. In the event that a security is ordered, the Plaintiff is permitted to provide security by bank or savings bank guarantee. The amount of the security shall be determined separately for each enforceable order, and we consider the following partial security to be appropriate:

Section I.1.a, I.1.b (recall and removal): 50 % of the total security

Section I.1.c (destruction): 30 % of the total security

Section I.2 (information): 10 % of the total security

Section I.3 (provisional damages): 7.5 % of the total security

Section IV (notice of judgment): 2.5 % of the total security.

37 The Defendants request:

I. The complaint is rejected.

II. Claimant is ordered to pay the costs of the proceedings.

III. Claimant is ordered to provisionally reimburse the costs of Defendants 3) to 5).

Alternatively:

IV. The enforcement of the decision is subject to an appropriate security to be determined by the Court and to be provided by Claimant.

V. The decision, including the orders contained therein, is made subject to the condition precedent that the patent-in-suit is not held to be wholly or partially invalid by the final decision – alternatively a first instance decision – in (other) revocation actions, including counterclaims for revocation.

Auxiliary:

The decision, including the orders contained therein, is made subject to the condition subsequent that the patent-in-suit is held to be wholly or partially invalid by the first instance decision – alternatively the final decision – in (other) revocation actions, including counterclaims for revocation.

38 The Claimant requests,

to reject Defendants' 3), 4) and 5) requests under III., IV. and V.

39 For the Counterclaim for revocation, the Defendants request:

I. European Patent 1 552 399 B1 is revoked in its entirety for the territory of Germany and France.

II. Claimant is ordered to pay the costs of the proceedings regarding the counterclaim for revocation.

III. Claimant is ordered to provisionally reimburse the costs of Defendants 3) to 5).

40 The Claimant requests in the Counterclaim for revocation:

I. The Counterclaims for revocation of the Defendants 3), 4) and 5) are rejected,

in the alternative:

The patent EP 1 552 399 B1 is upheld to the extent of the auxiliary requests 1 as submitted in Exhibit AR 1, and the Counterclaim is dismissed in all other respects [*c.f. audio recording of the oral hearing*].

II. Defendants 3), 4) and 5)'s request that the Claimant is ordered to provisionally reimburse the costs of the Defendant is rejected.

III. Defendants 3), 4) and 5) are ordered to jointly pay the costs of the proceedings regarding the counterclaims for revocation.

41 On 30 October 2025, the Judge-rapporteur granted the Defendants' request to submit a further written pleading in order to inform the Court about the decision of the German Federal Patent Court of 8 October 2025, to fully revoke the German part of the patent-in-suit. The Claimant was given the opportunity to comment on Defendants' submission and filed a further auxiliary request to amend the patent on 13 November 2025.

42 Claimant additionally requests in the Counterclaim for revocation,

in the further alternative:

The patent EP 1 552 399 B1 is upheld to the extent of the auxiliary requests 2 as submitted in Exhibit AR 2, and the Counterclaim is dismissed in all other respects [*c.f. audio recording of the oral hearing*].

43 The Defendants request:

I. The Application to Amend is not admitted into the proceedings.

II. Auxiliary, if the Application to Amend is admitted, the oral hearing is cancelled and postponed.

In any event, they maintain their original requests in the Counterclaim for revocation to revoke the patent-in-suit in its entirety.

44   In addition, the Defendants request as an auxiliary measure

   that the proceedings be stayed pursuant to Rule 295(a) RoP until a final decision in the parallel nullity proceedings regarding the German part of the patent-in-suit (Court docket: 6 Ni 15/24 (EP)),

if the court comes to the conclusion that the patent-in-suit is infringed and valid.

45   The Defendants request:

   The proceedings are not stayed until a final decision in the parallel national nullity proceedings regarding the German part of the patent-in-suit (docket-no. 6 Ni 15/24 (EP)) is rendered.

POINTS AT ISSUE

Standing to sue

46   The Claimant considers himself to have standing to sue. Claimant and Philips are in agreement that the patent-in-suit and its annex claims have been transferred effectively. A third party as the Defendants cannot challenge that. Against this background, the Claimant has standing to sue unless the Defendants can prove otherwise by substantially disputing facts which they did not. Furthermore, the entry in the respective patent register provides the (refutable) assumption that the registered individual/company is the actual proprietor, which is the case here. This cannot be eliminated by simply disputing. Finally, as a mere precaution, the Claimant relies on the PPA and PAs submitted as Exhibits P 25 and P 26, which, according to the Claimant, show that the patent-in-suit and all claims have been effectively transferred. The Claimant particularly states that the signatories of the agreements were duly authorised as confirmed by several witness statements.

47   The Defendants are of the opinion that the Claimant does not have standing to sue for the asserted claims. The Claimant has neither shown that it has validly acquired the patent-in-suit, nor that the claims for the past have been validly assigned to the Claimant. In clear contradiction to the front-loaded system, the Claimant did not provide any evidence in its Statement of claim of an effective assignment of claims for the period before the (alleged) acquisition of the patent-in-suit, nor did the Claimant provide any evidence for the effectiveness of the alleged transfer of the patent-in-suit. The burden of proof for the effective patent assignment lies with the Claimant.

48 Insofar as the Claimant has submitted a PPA and corresponding PA, the Defendants argue that these documents have been late-filed and must not be considered. Notwithstanding this, the Defendants dispute, based on different colours and formats of single pages of the PPA, which are also partly tilted, that Exhibit P 25 is a true copy of the original PPA (ink version), as signed by the parties to the PPA, including the exhibits thereto, in particular Exhibit A to the PPA. They also dispute that the patent-in-suit is listed in the original PPA (ink version), as signed by the parties to the PPA.

49 The Defendants further dispute that the conditions in sec. 4.1 PPA were fulfilled, in particular that the purchase price was received by Philips in full at the Closing and that the assignment of the patent-in-suit was unhindered by the Encumbrances, Identified Agreements and Current Agreements. The Defendants dispute that sec. 4.1 PPA covers the asserted claims and they dispute, in particular, that it was Claimant's and Philips' intention to assign such claims with the PPA. The Defendants further dispute that the asserted claims under the patent-in-suit were validly acquired by the Claimant by means of the PAs. They dispute that it was Claimant's and Philips' intention to assign the patent-in-suit with the PAs (anew) and that the PAs were correct in the sense that the assignment happened by means of the PPA before. Finally, the Defendants dispute that the signatories to the PPA and the PA had the authority to sign.

Claim construction

50 The Claimant states that an integrated circuit (IC) within the meaning of the patent-in-suit is an assembly of electric components such as transistors, resistors and capacitors, interconnected on a semiconductor material, for example systems on chips (SoCs). The processing modules mentioned in patent claim 1 perform a specific function in the overall operation of the IC and are interconnected via a network which is in case of the patent-in-suit a Network on Chip (NoC). Communication between the modules is performed over connections which support transactions.

51 The Claimant is of the opinion that "connections" are to be understood as a set of channels, each having a set of connection properties, between a first module and at least one second module. According to the patent-in-suit, examples of such connection properties may include ordering, flow control, throughput, latency, the lossiness, transmission termination, transaction completion, data correctness, priority or data delivery. The Claimant points out that the connection properties of the individual channels of a connection can be configured independently, for example for a request channel and for a response channel. The Claimant argues that the presence of independently adjustable connection properties supports the view that a connection is not tied to specific aspects of links, wiring or other aspects not related to the claim language. However, the system does not merely rely on reconfiguring network interfaces and routers for every transaction. Instead, a connection entails an allocation of resources for channels and in the event of unavailability, a connection may be refused. It is a structured process which implies that a connection is a deliberately managed entity. The patent-in-suit describes a connection as a structured entity involving predefined

communication channels with adjustable properties, requiring resource reservation and management. It does not describe a mere temporary routing configuration.

52 The Claimant explains that, for establishing a connection, the first module issues a request for the connection with the second module to the communication manager. This one requests a connection with communication channels each having a set of specific connection properties to the resource manager which determines whether the requested connection is available and responds the availability to the communication manager. Then a connection between the first and second module may be established based on the available properties.

53 As to the transactions supported by a connection, the Claimant states that communication between a first and a second module may be based on transactions including a request and response which may be transmitted via different channels of a connection – a request and a return channel – for outgoing messages from the first module to the second module and return messages in the other direction. The Claimant is of the opinion that transactions within the meaning of the patent-in-suit do not necessitate in any form that claim 1 requires an initial request for a connection followed by a separate and independent transaction. Neither the patent claim nor the patent-in-suit demands such a two-step process. On the contrary, according to a preferred embodiment in the patent description, the request initiating a transaction can include some data or required connection properties. Furthermore, there is no technical necessity for such a sequence. Consequently, the transaction request may also include the required connection properties.

54 The Defendants understand the term "integrated circuit" as a chip, i.e. an arrangement of several components, such as transistors, resistors, and capacitors which are arranged and interconnected on a substrate of semiconductor material. According to the patent, this IC comprises processing modules and a network providing connections between a first and at least one second module. Messages and data transmitted via these connections are referred to as transactions. A transaction consists of a request and, possibly, a response.

55 The Defendants are of the opinion that connections are not simple links, i.e. hardwired and therefore permanently existing links, between the modules but adaptable to the requirements of the modules. According to the patent-in-suit, a connection is only established between two modules in response to a request of a module. This is achieved by configuring several existing network interfaces and routers between the modules to form a temporary connection comprising a set of communication channels which enable communication between the modules. Each of these channels includes a set of connection properties.

56 The Defendants point out that these properties of a channel are further specified in patent claim 1 as being independently adjustable. This means in the words of the patent specification that the connection properties can be configured independently. Examples are the allocation of buffer space, the reservation of bandwidth, a guaranteed throughput etc. The connection properties of the communication channels of a connection, e.g. for outgoing and return parts of a connection, may differ. However, in the Defendants' view, a once established connection

will, for all practical purposes, have a certain lifetime (stability) and cannot be changed from packet to packet even if a connection is always temporary. This follows from the fact that a connection is only established if certain connection properties are available. If this is the case, the connection is used to exchange transactions between the modules by means of corresponding messages.

57 Besides the first and second module and the network for providing at least one connection between the first and second module, the integrated circuit comprises communication managing means and resource managing means. These means can be arranged in the network or in one or some of the network interfaces.

58 A connection between a first and a second module will be established by the first module sending a corresponding request to the communication managing means. According to the Defendants, this request must not be confused with a request as part of a transaction initiated by a first module. The Defendants point out that, unlike the description of the patent-in-suit, patent claim 1 does not require this request to specify the desired connection properties. However, at least at the point when the communication manager forwards the request to the resource managing means, the request contains information about a specific set of connection properties of the requested connection.

59 According to the Defendants, the resource manager is the element checking whether a connection with the requested properties is available and providing the communication manager with a corresponding response. For this task, the resource manager obtains knowledge about the available network resources required to implement the requested connection properties. Based on this knowledge, the resource manager compares the available connection properties of the network with the required connection properties forwarded by the communication manager. The allocation of the available resources for the required connection properties can be performed by using a property table. Then the resource managing means responds with the availability of the requested connection to the communication manager, and a connection is established or not. Therefore, according to the Defendants, the set-up of a connection is a two-step-process: before a connection can be used, the availability of the required properties must be determined and then the connection must be established, i.e. created. Insofar as the Claimant refers to figure 1 and 2 of the patent-in-suit for its different opinion, Defendants point out that these figures do not fall under patent claim 1.

60 The Defendants point out that patent claim 1 does not specify which element is responsible for establishing the connection whereas the patent description clarifies that the resource manager does this in response to the communication manager accepting the available resources.

61 The Defendants argue that, as a result, the request for a connection is handled by specified functional elements – communication manager and resource manager – in a very specific

way. Thus, not every adjustment of the data flow between two modules which is based on Quality of Service parameters falls under the patent-in-suit.

Validity

62 The Defendants are of the opinion that the patent-in-suit lacks patentability.

63 They argue the technical teaching of patent claim 1 is not novel with regard to the article "Networks on Silicon" from Goossens et al. (hereinafter: "Goossens"). The Defendants take the view that „Goossens" describes an integrated circuit, with IP blocks as a plurality of modules as well as a network called NOS (Network on Silicon) providing connections between these modules. The connections are formed by communication channels each having a set of connection properties. The Defendants contend that these connection properties, such as throughput and latency, are configured by an application manager or a quality-of-service manager, and are, therefore, adjustable independently. Each connection, consisting of multiple channels, supports outgoing as well as return messages between IPs, as there are half duplex, duplex and multicast connections especially since the patent-in-suit does not require a bi-directional communication. Furthermore, "Goossens" describes different management means. The transport layer provides end-to-end connection management, thereby acting as communication manager. The application manager and the quality-of-service (QoS) manager manage the resources of the network. Service requests can be issued by IPs to the transport layer, i.e. the network manager which must forward the request to the application and QoS manager which observes and steers the NOS. The service request may be granted or denied by the NOS. As the NOS that offers guaranteed services must accurately model its resources, a connection must be created depending on resource availability.

64 The Defendants further argue that the application WO 00/33201 (hereinafter "Levy"), submitted as Exhibit BP-CR 2, is novelty destroying. "Levy" describes an interconnect for integrating functional blocks in an integrated circuit device. The functional blocks, i.e. the modules, have ports which are connected by an interface controller which defines logical communication channels between the ports and the associated modules. The Defendants consider that the interface controller constitutes a network within the meaning of the patent-in-suit. The communication channels are created in response to requests called "IC commands", issued by a functional block. Multiple channels may form one connection between two modules. The request may already contain some information about properties of the requested channel, such as being unidirectional or bidirectional, and the number of ports. In view of the Defendants, a connection may therefore comprise a set of communication channels each having a set of connection properties. The channels are then allocated based on programmable arbitration schemes. As several channels may be grouped to form a connection between two modules, their connection properties are adjustable independently. The connection also supports transactions comprising read commands and responses. According to the Defendants, several blocks in the interface controller, involved in establishing the channels, represent the communication manager and the resource manager. A channel request from one of the functional blocks is sent to the interface controller, forwarded and

processed by certain blocks in this controller, and finally, the channel is established and reported to the functional block or denied.

65 Finally, the Defendants opine that the article "A Router Architecture for Networks on Silicon", from Rijpkema et al. (hereinafter: "Rijpkema"), submitted as Exhibit BP-CR 3, discloses the claimed invention. "Rijpkema" describes a Network on Silicon which interconnects a plurality of IP blocks, i.e. modules. The IP blocks require differing services of the interconnection network, such as guaranteed bandwidth, minimized jitter, reduced latency. In particular, GT (guaranteed-throughput) traffic and BE (best effort) traffic realise different services, so that communication channels may have different properties which are adjustable independently. "Rijpkema" describes a path from a source to a destination as an example for a connection. Therefore, the Defendants are of the opinion that independent connections could be set up from a source to a destination and from a destination to a source The system comprises routers which provide GT and BE services and an element which carries out admission control and decides, for example, whether or not a connection with the requested bandwidth could be established. According to the Defendants, these are the communication and resource managers. A request for a connection with certain properties, such as "GT" and a certain bandwidth can be issued by a source IP block and forwarded to the router which hands over the request to the element carrying out the admission control. This decides whether the connection with the requested properties will be established or not, as, for example, a requested GT connection would introduce a clash with an existing connection.

66 The Defendants further allege a lack of an inventive step. The claimed technical teaching is obvious to the skilled person under the combination of "Goossens", "Levy" or "Rijpkema" with the US patent 5,461,611 (hereinafter: "Drake"), submitted as Exhibit BP-CR 4. If the person skilled in the art takes any of the afore-mentioned prior art documents as a starting point, disclosing a NoC with connections between modules, and intends to implement a flexible and effective communication scheme with a resource managing means to manage the allocation of resources for providing connections between the modules, "Drake" would provide such scheme. "Drake" relates to a QoS management system that receives requests for "QoS connections" with specified properties, determines whether the required network resources are available, and reserves those resources for the requesting station. In particular, "Drake" discloses a QoS requestor manager and a QoS allocator as communication managing means and resource managing means within the meaning of the patent in suit, which receive, forward and process a connection request. The QoS allocator determines whether a path exists that satisfies the requested QoS values and sends a response to the source station.

67 At the very least, according to the Defendants, the technical teaching of claim 1 is rendered obvious by a combination of one of the publications "Guaranteeing the Quality of Services in Networks on Chip" from Goossens et al. (hereinafter: "Goossens 2"), submitted as BP-CR 8, or "Trade-offs in the design of a router with both guaranteed and best-effort services for networks on chip" from Rijpkema et al. (hereinafter: "Rijpkema"), submitted as Exhibit BP-CR 9, with "Drake". The Defendants take the view that both publications are prior art since the priority of the patent-in-suit is invalid.

68 The Claimant is of the opinion that the claimed technical teaching of the patent-in-suit is novel. It admits that "Goossens" discloses connections with several communications channels. However, the discussion primarily focusses on the use of a single channel that can have combined throughput, and latency guarantees or best-effort service, and "Goossens" does not provide any indication that the properties of (different) individual channels within a connection can be independently adjusted. Furthermore, "Goossens" does not disclose that the connections support transaction in the sense of a bi-directional communication. The Claimant also argues that the managing means mentioned in "Goossens" do not correspond to the communication and resource managers according to the patent-in-suit, as it is not disclosed that they perform the functions of such communication and resource managers, i.e. controlling the maintenance of communication channels between different modules and actively controlling and allocating network resources. Moreover, the service request cannot be regarded as a connection request within the meaning of patent claim 1. In the Claimant's view, the Defendants have also failed to prove that such a request is sent to a management means in "Goossens". Consequently, "Goossens" does not disclose the specific communication and resource management flow described in patent claim 1.

69 With regard to "Levy", the Claimant argues that the concurrent serial interconnect including the interface controller does not form a network within the meaning of patent claim 1. Further, "Levy" does not describe connections as comprising a set of communication channels each having a set of connection properties which are adjustable independently. Therefore, a corresponding connection request is not disclosed in "Levy". Finally, the determination of a connection and its establishment do not depend on the availability of specific connection properties.

70 Finally, the Claimant believes that „Rijpkema" also lacks a connection comprising a set of communication channels each having a set of connections properties which can be adjusted independently. Accordingly, there are no communication managing means which can forward such a connection request with communication channels each having a specific set of connections properties. Nor are there any resource managing means which are adapted to determine whether the requested connection based on said communication with said specific connection properties is available, and such a connection is not established based on available connection properties.

71 The Claimant further takes the view that the claimed invention involves an inventive step. According to the problem-solution-approach, the skilled person would only consider "Rijpkema" as the closes prior art. Against this background, the objective technical problem is to improve resource management in networks on chip (NoCs), in particular with regard to QoS. However, the skilled person trying to find a solution to this problem would never look into "Drake" as a secondary document to combine with the "Rijpkema". The technical problem formulated is specific to NoCs, whereas "Drake" primarily deals with LAN-based architectures and communications protocols suitable for large-scale networks, which operate differently from NoCs. Even then if the skilled person would look into "Drake", s/he would still not be able

to arrive at the claimed technical teaching. The stations in "Drake" are not equal to processing modules within the meaning of patent claim 1. Even if one takes a different view, the computation and communication is both performed by the source station which comprises an application that is responsible for causing transmission via LAN protocol stack that runs at the station itself. This contradicts the fundamental idea of the patent-in-suit and also differs from the network architecture of "Rijpkema". Furthermore, according to the Claimant, "Drake" does not even disclose communication management means which truly performs the management of the communication between the modules. Rather, the QoS Requestor manager in "Drake" is designed to handle QoS requests for multimedia streams.

72   The Claimant finally argues that, for these reasons, the patent-in-suit is also inventive with regard to the combination of "Goossens 2" or "Rijpkema 2" with "Drake", regardless of the priority of the patent-in-suit, which the Claimant considers valid.

Attacked embodiment

73   The Claimant considers the "infringing embodiments II and IV" as the attacked embodiments in general and not limited to specific models. All products which incorporate, implement, utilise, include, or otherwise comprise NoCs designed using tools from the company Arteris Inc. ("Arteris NoC") or NoCs which are materially similar (core-identical) to such Arteris NoCs are attacked. The Claimant argues that it is sufficient to demonstrate that a sample of the attacked embodiment, here: the Snapdragon 8+ Gen. 1, realises all features of the asserted claims. For all other attacked embodiments, it is sufficient to state that they are 'core-identical' or 'materially similar' as the Claimant did. As long as the Defendants do not argue differently, they must be considered as infringing.

74   The Defendants consider only the processor Snapdragon 8+ Gen. 1 as attacked embodiment because the Claimant merely bases its infringement allegation on this single IC model. They argue that the Claimant, instead of identifying only this model and relying on similar models being included, has chosen to explicitly name a large number of models that are also said to be attacked. But then the Claimant must also show that all of these models use the patent-in-suit, because all of these are at issue. Otherwise, Defendants would be burdened with reviewing all of the named products and reply accordingly, which would be inappropriate. The Claimant has however not provided any reasons as to why the other 200+ listed "infringing embodiments II" should be "core-identical" or "materially similar" to that model with regard to the patent-in-suit. Insofar, the Claimant's statements are inconclusive. At least one example, the processor MSM6000 uses fundamentally different technology than the Snapdragon 8+ Gen. 1 as it has no NoC and has already been on the market since 2002. Beyond the MSM6000, there are further models listed which were already publicly available before the priority date of the patent-in-suit without using any NoC technology.

Infringement

75   The Claimant takes the view that the infringing embodiments II and IV realise the features of claim 1. The Qualcomm NoC ICs are integrated circuits comprising at least two processing

modules, for example a central processing unit, a graphics processing unit and/or a secure processing unit.

76 The Claimant asserts that the infringing embodiment II – the Qualcomm NoC ICs – comprise the Arteris NoC designed according to the Arteris NoC Chapter. This could be inferred from the fact that the Defendants, according to the press releases and Arteris' statements on its website, use Arteris NoC IP technology for over a decade for their ICs and even acquired Arteris NoC technology including Arteris employees in 2013. In the Claimant's view, this shows that the Defendants rely on Arteris NoC technology in their ICs.

77 The Claimant disputes the Defendants' assertion that ███████████████████████ ██ ██ ██ ████████████████████████. This assertion is already refuted by the publicly available Linux 6.0.1 Kernel (extracts submitted as Exhibit P 18; hereinafter: Source Code) containing files which are part of the Linux Kernel's interconnect framework and comprise functionality to manage Quality of Service (QoS) within the infringing embodiments. These files contain functions which configure the behaviour of specific interconnect nodes in the NoC, to ensure efficient handling of data traffic by adapting to bandwidth requirements and prioritising traffic as needed. It is designed to program the QoS parameters of a given interconnect node. The QoS configuration for the node is contained within the node's data structure, which includes fields for default priority and urgent forwarding. There are also stateful tracking mechanisms for QoS within Defendants accused products. Specifically, parameters for stateful QoS management, including "areq_prio" (node request priority), "prio_level" (priority level for communication), and "urg_fwd_en" (enable urgent forwarding) are explicitly defined. In the Claimant's view, this illustrates that Defendants' chips employ a mechanism to handle connection requests and adapt the connection parameters according to the patent-in-suit. Defendants cannot successfully claim that the networks on their chips are designed as stateless. The Claimant further argues that the "predefined routes" which are allegedly employed in the Defendants' network do not contradict the patent claim which focusses primarily on connection properties, not on routing specifics. According to the Claimant, the Defendants' arguments fail to provide any justifiable proof that their implementation does not infringe patent claim 1.

78 The Claimant is of the opinion that the Defendants' assertion that the Arteris NoC Chapter does not describe the NoCs of the infringing embodiments is unsubstantiated as they have failed to provide any technical evidence or documentary proof demonstrating how their NoC design deviates from Arteris' NoC technology. The Defendants' argument centres on the use of a specific library name – Danube – which is a marketing term rather than a functional descriptor. However, the use of a different name for a technological approach as described in Arteris NoC Chapter does not imply a fundamental difference in its implementation. In the Claimant's view, the mere denial of the use of Arteris technology by the Defendants without substantiation does not suffice to refute an infringement claim.

79   The Claimant explains that NTTP transactions are performed over the Arteris NoC. These are made of request packets, traveling through the Arteris NoC between a master module and a slave module, and response packets that are exchanged between the slave module and the master module through the Arteris NoC. As the transport layer of the Arteris NoC allows for NTTP transactions to be delivered between the master module and the slave module, a connection according to the patent-in-suit is arranged between the master module and the slave module.

80   According to the Claimant, links between NIU of an Arteris NoC may include <u>connections</u> of wires, busses, time-division multiplexing, switches and/or routers. Therefore, in the Arteris NoC the request and response packets involved in the NTTP transactions are carried out over request links and response links respectively, which can be regarded as request and response channels forming the set of communication channels according to the patent-in-suit. These channels also have connection properties as the packets transported over the Arteris NoC are comprised of cells embedding several signal fields. One of them is the Signal pressure (Prs.) field which indicates the current priority of the packet used to define preferred traffic class and allows each communication channel to be associated with different connection properties in order to achieve Quality of Service (QoS). Other signal fields are "RxRdy" for flow control, "Tag" for ordering and "SlvAddr" for QoS, bandwidth regulation and control. In the Claimant's view, further connection properties are possible by assigning dynamic packet priorities and/or dynamic pressure propagation.

81   The Claimant considers the Defendants' argument unconvincing that their system does not use connections as defined in patent claim 1 because ███████████████████████ ███████████████████████████████. The patent-in-suit does not mandate that connection properties be adjusted by modifying routing paths. It simply requires that communication channels within a connection have independently adjustable properties. The use ███████████████ does not exempt them from infringement, as the patent does not require routing flexibility but rather the ability to manage the properties of connections independently. The Claimant further argues that the Defendants' argument that there is no determination of whether connection properties and related resources are available contradicts the technical evidence provided by the Linux Source Code associated with Qualcomm chips. This reveals that the Defendants' interconnect architecture employs stateful tracking of resource allocation, contradicting their claim of a "stateless" network.

82   The Claimant further explains that the <u>connection properties</u> of the communication channels in an Arteris NoC can be adjusted independently as the Tag and Pressure signal for the links as well as the Slave Address are set by having it embedded into the NTTP request and response packets. The pressure signal can be generated by the master module or the slave module. Furthermore, according to the QoS feature of the Arteris NoC, a switch can also allow some of the features such as MINI-port attributes, routing tables, arbitration mode and pipelining strategy. In addition, QoS information may be generated by the Arteris NoC using the Arteris QoS Generator which runs bandwidth limiters and rate regulators to generate the

QoS information. Finally, a rate adaptation mechanism and other traffic control mechanisms allow to independently adjust the connection properties of the links of the Arteris NoC. Insofar as the Defendants allege that their system ███████████████████████ ██████████████████████████████, this contradicts the publicly available Linux source code. Accordingly, the infringing embodiments implement QoS mechanisms that manage interconnect parameters, for example, configure a NoC node to adjust bandwidth and priority requirements. According to the Claimant, the argument that ████████████████████████ ████ does not negate the presence of configurable communication properties, as routing and connection properties are distinct.

83 According to the Claimant, a module in the infringing embodiments issues a <u>request for a connection</u> to the communication manager as follows: The NTTP protocol employed in the Arteris NoC allows the request packet to initiate the transaction by embedding both the data payload (i.e., incoming and/or outgoing messages), and at least "Prs" signal to be included in the NTTP request/response packet structure. The "Prs" signal defines the connection properties necessary for QoS management. The "Prs" signal defines the connection properties necessary for QoS management. QoS is supported in the switch. The switching at the switch is done by accepting NTTP packets carried by several input ports and forwarding each packet to a specific output port. According to the Claimant, the switch and/or circuitry within the switch is therefore a <u>communication manager</u> consistent with the disclosure of the patent-in-suit. As another example, when a request enters the NIU comprising a Tag field, the Tag is evaluated by a communication manager to support ordering within the network. Furthermore, in the Arteris NoC, QoS information can also be generated from within the Arteris NoC using the Arteris QoS Generator if the QoS prioritization data is not available from the modules. The Claimant emphasizes that the NTTP protocol does not necessitate a two-step process. However, the patent-in-suit does not require such a process.

84 The Claimant is further of the opinion that the infringing embodiments comprise at least one <u>resource manager</u> within the meaning of patent claim 1 as QoS implementation demands network resource management. For example, in the Arteris NoC, the switch and/or circuitry within the switch contains a resource manager consistent to the patent-in-suit because packet switching includes the steps of: 1) choosing the route, 2) arbitrating, 3) switching and 4) arbiter release. According to the Claimant, at least step 2) implements resource management in the Arteris NoC, for example the "arbiter" block, which uses the pressure information to select the input port packet with the greatest pressure among the set of requesting input port packets. The same applies to NIUs, when a request enters the NIU comprising a Tag field which enables ordering.

85 The Claimant is also of the opinion that the publicly available Linux Source Code for Qualcomm chips includes functions which explicitly handle Quality of Service (QoS) configurations and imply a process similar to the role of a communication manager and resource manager, as specified in claim 1.

86   The Claimant also explains that the first module in an Arteris NoC is adapted to issue a request for a connection to the communication manager because the master module sends request packets to the slave module. The request for a connection can be an integral part of the transaction itself. This request is first sent to the initiator NIU and forwarded to a switch both of which are or contain communication managers. Then the request is forwarded to a resource manager in the sense of patent claim 1. In this regard, the Defendants explain that the input controller of the switch extracts data from the incoming packets, including the pressure signals and sends it to the arbiter which is a resource manager. Furthermore, the initiator NIU of the Arteris NoC also serves as communication manager, in the case that bandwidth regulators/limiters are applied. In this case, the request packets containing the requested properties (e.g., QoS prioritization data) will be forwarded by the initiator NIU to the bandwidth regulators/limiters, which serve as resource manager.

87   The Claimant additionally argues that the infringing embodiments employ "stateful" tracking mechanisms for QoS within the interconnect architecture, configuring bandwidth, and priority levels, as evidenced by the Linux Source Code. Consequently, their system inherently issues requests that influence connection properties. The Defendants' assertion ███████████████ ████████████████████████████████ is contradicted by their own implementation. According to the Claimant, the reliance on ████████████ argument is also misplaced as the patent-in-suit does not require routing flexibility but focusses on managing connection properties.

88   The Claimant is also of the opinion that the resource manager in an Arteris NoC also determines and responds the availability of the requested connection according to the patent-in-suit. In case of the pressure signal, the arbiter selects one requesting input port per output port. In other words, the arbiter enquires whether a connection requested by the input port is available and responds the availability by selecting or by not selecting the input port. As the input controller of the switch transmits the packet to the crossbar and then eventually to the output (Tx) port of the switch, the input controller is the communication manager to which the availability is responded. As a further example, the Claimant refers to the NIUs in the case that the Tag field is evaluated. Finally, the bandwidth regulators/limiters also determine and respond the availability of the requested connection since they cause the master NIUS to stop accepting requests or the transaction to be demoted if a bandwidth threshold is exceeded.

89   Finally, the Claimant argues that in the example of the arbiter a connection is established by the Arteris NoC (or not) based on the input port being selected or not. Likewise, in the case of bandwidth limiters/regulators, a connection is established by the Arteris NoC (or not, or degraded) based on the bandwidth threshold being exceeded or not as reported by the bandwidth limiters/regulators.

90   The Claimant argues that, even if the Arteris NoC Chapter does not explicitly use the term "connection-oriented", it contains descriptions of features consistent with the patent's definition of a connection as it clearly discloses that the request and the response channel of a connection supports outgoing and/or return transaction messages respectively, as is required

by patent claim 1. Moreover, both the request and response packet structure includes at least "Prs" signal (i.e., connection property of the communication channels in claim 1) that can be set independently for manipulating QoS offered by the communication channels of the connection. Apart from that, Arteris NoC Chapter discloses a connection-oriented approach as its text discusses extensively about QoS mechanisms, which provide guarantees such as bandwidth and/or end-to-end communication latency. These guarantees are managed through prioritized arbitration and packet pressure signalling embedded in the NTTP protocol. The arbitration process maintains input/output connections during packet transit, demonstrating an intentional effort to manage connections based on traffic priorities and system requirements.

91   Insofar, as the Defendants allege that the pressure information does not constitute a connection property but only indicates the priority of the message transmitted, the Claimant points out, that the pressure signal information serves a broader purpose than merely prioritizing transactions. The pressure signal information is embedded in the Arteris NoC framework to indicate Quality of Service (QoS) attributes, which inherently involves tracking bandwidth and/or throughput over time. This supports the interpretation of the pressure signal as connection property of a channel in a connection. It is used to categorize traffic into various traffic classes. These traffic classes directly equate to connection properties associated with the communication channels of a connection. Moreover, when a connection is used to transmit a stream of data, the pressure signal information ensures that the connection receives the appropriate bandwidth and/or throughput guarantees over the entire stream, not just for a single transaction packet. The routing decisions in switches leverage this pressure signal information, which propagates across switches to influence packet prioritization and arbitration outcomes. This demonstrates a direct link between the pressure signal information and the allocation and adaptation of communication channels in the NoC. In this regard, a determination whether a connection with a certain pressure level is available also takes place, as the Claimant states. By selecting the NTTP packet with the highest pressure among the NTTP packets at the competing input ports, the arbiter inherently determines whether the requested connection from an input port to the output port with the requested connection property (for e.g., preferred traffic class) is available or not.

92   The Defendants are of the opinion that, even if one assumed that the Qualcomm NoC products would be described by the Arteris NoC Chapter, this documentation would not show a realisation of the teaching of claim 1 of the patent-in-suit. They argue that the documents presented by the Claimant do not describe a connection-oriented network as claimed. The documents describe neither issuing and processing of a request for a connection, nor establishing (and terminating) a connection. The request and response packets sent on the transaction layer cannot be both the outgoing messages and return messages on the one hand and the request for establishing a connection on the other at the same time. There is also no hint in the documents regarding Arteris NoCs for any communication managing means or resource managing means handling such a request for a connection or establishing such a connection.

93 The Defendants further argue that the Arteris documentation does not disclose connection properties, in particular no resource manager which determines their availability. The pressure information presented by the Claimant does not specify connection properties but priorities of packets to be communicated between modules. It solely indicates the priority of a transaction, i.e. the message transmitted, not of a channel in a connection. Moreover, according to the Defendants, pressure information is used for arbitration between packets at a single node within the network. The pressure is relative between the packets but not a connection property. This is further illustrated when packets at more than one input port request a certain output port at a given time. Then the switch will permit the higher priority packet to proceed along its path. Consequently, a datapath connection is established between the input of the switch with the packet with the higher priority and the desired output of that switch. Therefore, the connections are established within a switch and unrelated to a connection between modules as claimed. The network described in the Arteris documentation does not realise connections with channels having connection properties within the meaning of the patent-in-suit.

94 Finally, the Defendants point out that the Arteris documentation lacks any communication managing means and resource managing means for handling any request. Only the processing of transactions in the router network is shown. However, routers cannot realise the claimed communication manager and resource manager, since they do not determine whether connection properties are available, nor do they base any connection decision thereon. The Defendants further argue that the Arteris documentation does not provide any indication that a determined availability is provided from any resource manager to a communication manager.

95 Irrespective of this, the Defendants even dispute that Qualcomm NoC products, i.e. the infringing embodiments II and IV, were designed identical to "Arteris NoCs" described in Chapter 11 of the book "Networks-on-Chips Theory and Practice", submitted as Exhibit 11. The Arteris NoC Chapter does not describe NoCs on Qualcomm chips. It is rather directed to proprietary Arteris technology which differs from the design used for Qualcomm NoCs. The Defendants are of the opinion that the press releases relating to Arteris NoC technology used in the Defendants' processor applications and to the acquisition of Arteris technology by Qualcomm in 2013 do not support Claimant's allegation that any NoCs in Qualcomm chips are identical to any Arteris NoC's. This allegation is factually incorrect. According to the Arteris NoC chapter, Arteris proposes a complete commercial solution for SoC communication architecture, which is based on the Danube NoC IP block library. However, the Qualcomm's design tool does not comprise the Danube NoC IP block library.

96 The Defendants state that the Qualcomm NoC products do actually not implement the technical teaching of claim 1 of the patent-in-suit. ███████████████████████████ ███.

97 According to the Defendants' explanations, ████████████████████████████ ███ ███ ███

██
██
██
██
██
██
██
██
██
██
██
██
██
███████████████████████████████.

98 Based on this, the Defendants argue that almost no feature of patent claim 1 is realised. ███
██
██
██
██
██
██
██
██
██
██
██
██
█████████████████████████████.

99 According to the Defendants, this also applies to the Claimant's statements regarding the use of the Linux 6.0.1 software kernel. Above all, the Defendants are of the opinion that these statements are late filed because the software had been available to the Claimant before the infringement action was filed but establish now a major change in Claimant's infringement theory. The Defendants request that the statements are rejected.

100 Irrespective of this, the Defendants argue that the Claimant's submissions are inconclusive. Firstly, Qualcomm provides the Linux drivers as open source, such that any user may change the drivers as needed. Second, Claimant relies on various files of the open-source and publicly available Linux software which are completely unrelated. Thirdly, the extracts of the Linux kernel submitted by the Claimant do not demonstrate the realisation of the teaching of the patent-in-suit. The drivers give no indications that a request for a connection is issued. The Claimant does also not provide any reason why the inherent functions should contain a request for a connection or specify any properties of a connection or channel. Irrespective of

this, the Quality of Service parameters are irrelevant for connections and channels, since the functions allegedly configure nodes, but not connections and properties of their channels. In fact, these functions are not related to a request. The Defendants further argue that the parameters the Claimant refers to do not realise connection properties. Instead, most of them relate to the priority of the packets, others to resource and power management. None of them have an influence on the paths the packets are transmitted on. The parameters cannot have an influence on the paths of the packets, since the attacked embodiment follows a different approach as mentioned before: █████████████████████████████████████ ███ ███ ██████████████████████████████████.

101 The priority of a packet may only lead to faster transmission from one module to another, but it does not lead to a different route of travel through the network. ██████████████████ ███ ██.

- The parameters „areq_prio" and "prio_level" mentioned by the Claimant relate to the priority level assigned to a packet by a respective module.

- The parameter "urg_fwd_en" specifies, whether the function "urgent forwarding" is enabled in the network. ███████████████████████████████████████ ██. (BP 4)

The parameters "areq_prio", "prio_level" and "urg_fwd_en" ██████████████████████ ███████████████████████████. They are not requested, in particular not in connection with a request for a connection and there is no determination whether the set priority level or the enabled urgent forwarding function is available.

102 Parameters regarding the resource and power management may adapt the frequency of the clock that drives the network. In case of a low utilisation rate, there is no need for a high clock rate and vice versa.

103 The parameter "u64 max_bw" mentioned by the Claimant reflects the needs of a bus master connected to a network and is used by the resource and power management to correspondingly adapt the clock rate of the network as determined by a separate algorithm.

104 The Defendants are of the opinion that none of these parameters specify connection properties within the meaning of patent claim 1. They are either assigned to a packet moving through the network along its already pre-defined path, or they relate to the frequency of the clock driving the network. In either case, neither the availability of these parameters is determined nor do they change the path that the packet takes in the network.

105 The Defendants argue that, even if the priority levels and the resource and power management were considered to involve connection properties, the Qualcomm NoC products would not have the claimed communication managing means and resource managing means that request connections, determine the availability of connection properties and establish

corresponding connections. The attacked embodiment merely comprises interfaces and signal paths between chip modules. The routers carry out arbitration for request and response transactions as is the case in the prior art.

Infringing acts

106 The Claimant argues that Defendants 3) and 4) offer, distribute, import and store the attacked embodiment, inter alia, in Germany and France. Defendant 3) is responsible for the website www.qualcomm.com and advertises the attacked embodiment there. Additionally, Defendant 3) provides a "Sales Support" and a list of distributors on its website, where the infringing embodiments can be purchased. These partners are verified to offer, sell and recommend products by Defendant 3) and Defendant 4). Defendant 4) is listed on the footer of the website www.qualcomm.com/ and its subdomains as follows: "Snapdragon and Qualcomm branded products are products of Qualcomm Technologies, Inc. and/or its subsidiaries." The Claimant therefore takes the view that Defendant 4) is offering the infringing products on the Website because without the consent no offering would be possible.

107 The Claimant further states that Defendant 4) sells products including the attacked embodiments to manufacturers that use, amongst other products the attacked embodiments, to include them in a broad range of devices, including but not limited to mobile devices, wireless networks etc. On their website an overview of Defendants' 3) and 4) business partners is provided. The list includes German and French partners, but also international partners, manufacturing mobile devices which are sold in Germany and France. The Defendants 3) and 4) know or even actively support that products in which their infringing embodiments are built in are distributed in Germany and France. In particular, Defendants 3) and 4) distribute their infringing ICs to Samsung Electronics Co., Ltd., the former Defendant 1), for implementation and use in its electronic devices. Furthermore, Defendant 3) and Defendant 4) import and store their ICs – which are also predominantly manufactured in Asia – throughout Europe and especially in Germany and France, in particular for the purpose of distribution.

108 The Claimant further asserts that Defendant 5) markets, sells and distributes products of Defendant 3) and Defendant 4) in Europe, especially in Germany and France. It infers this from Defendant's 5) entry in the German company register. According to the Claimant, it is at least undisputed that Defendant 5) offers the infringing embodiments in France and in Germany. As far as the Defendants dispute that the Defendant 5) has placed the infringing embodiment on the market or imported or stored the same in Germany and/or France during the lifetime of the patent-in-suit, it is sufficient to help someone to place the attacked embodiments on the market. This is exactly what Defendant 5) did.

109 The Defendants state that no Samsung devices containing Qualcomm ICs were/are offered, placed on the market, imported and/or stored in Germany and/or France by the Defendants 3) and 4). Rather Samsung did/does so – and appears now, after the settlement with the Claimant, to be entitled to do so. Moreover, neither Defendant 3) nor Defendant 4) has itself placed on the market, imported and/or stored any Qualcomm NoC products in Germany and/or

France during the lifetime of the patent-in-suit. Nor did the Claimant present the requirements of a "wilful collaboration" for the alleged attribution of infringing acts. In the Defendants' view, referring to "collaborators" shown on the website www.qualcomm.com/products/automotive/partners is not sufficient, taking also into account that there is no relation to the Qualcomm NoC products. The Defendants are of the opinion that the mere position of Defendant 3) as a parent company of the Qualcomm group cannot establish their liability as such, as this would lead to a strict liability of the top level entity. Even if one assumes that Defendants 3) and 4) know that at least some of the Qualcomm NoC products finally found their way on the market in Germany and/or France, this knowledge alone cannot establish a liability of the, themselves non-selling Defendants 3) and 4).

110 Insofar as the Claimant has stated that the Defendants 3) and 4) distribute their ICs to the former Defendant 1) for implementation and use in its electronic devices, the Defendants are of the opinion that these acts of distribution cannot constitute infringing actions in Germany and/or France since the Defendant 1) is located in the Republic of Korea. With regard to the alleged "offering" of the Snapdragon 8+ Gen. 1, the Defendants consider the Claimant's statements to be inconclusive.

111 The Defendants state that the Defendant 5) did not place any Snapdragon 8+ Gen. 1 on the market in Germany and/or France, nor did it import and/or store any Snapdragon 8+ Gen. 1 into/in Germany and/or France during the lifetime of the patent-in-suit. Beyond that, the Claimant merely refers to the excerpt from the German company register which does not reflect what Defendant 5) actually does and did over time.

Exhaustion

112 The Defendants further invoke the principles of exhaustion and therefore request that the Claimant and third parties (Samsung, Arteris) be ordered to produce several patent license agreements. The Defendants are of the opinion that the claims asserted by Claimant are unfounded to the extent that products are concerned, which fall under the scope of the license agreements in place between Claimant and RPX Corporation coming into effect as of 31 May 2024 ("RPX Agreement") on the one hand and between RPX and Samsung and RPX and Arteris on the other. The Claimant's rights must be exhausted with regard to the allegedly infringing products (i) manufactured and supplied by Samsung to Qualcomm and/or (ii) using "tools" and/or "NoC technology" from Arteris, if such use should form the basis for assuming infringement of the patent-in-suit. Insofar as Claimant argues that chips manufactured by Samsung and supplied to Qualcomm were excluded from the license, it must be taken into account that exhaustion is a legal effect provided for by law which cannot be circumvented by contractual agreements. Hence, the Claimant itself has shown that any chips supplied by Samsung to Qualcomm are licensed and, insofar, the principle of exhaustion applies. Even if "Arteris was merely granted a covenant to sue last", exhaustion is not excluded as the consent of the patentee to distribute the product does not necessarily have to be in the form of a license.

113 The Defendants further argue that the claims asserted by the Claimant are also inadmissible or at least unfounded, to the extent that the Qualcomm NoC products supplied by the Defendants were used in vehicles of the Volkswagen group. This objection is based on the Covenant not to sue included in the settlement agreement(s) between Claimant and Volkswagen AG and Audi AG and is raised as a defense by Defendants with regard to all Qualcomm NoC products supplied directly or indirectly by any of the Defendants.

114 The Claimant believes that the Defendants cannot successfully rely on an exhaustion defence. The RPX Agreement explicitly excludes the chips manufactured by Samsung and supplied to Qualcomm from the license granted to Samsung (via RPX). Additionally, also Arteris did not get a license from the Claimant.

Statutory limitation of claims

115 The Defendants are further of the opinion that the claims asserted by the Claimant in the Statement of claim are partially time-barred. For each individual claim, they explain why and to what extent they believe it is time-barred under the respective national German or French law. In particular, they argue that Philips must have known already way before 2020 that the attacked embodiment makes use of the patent-in-suit, if following the infringement mapping of Claimant.

116 The Claimant argues that national statute of limitations does not apply to the claims asserted, but rather Art. 72 UPCA the requirements of which, however, are not met.

Proportionality

117 Finally, the Defendants take the view that the requests must at least be rejected for lack of proportionality, which the Claimant contests.

GROUNDS FOR THE DECISION

118 Both the Counterclaim for revocation and the Infringement action are admissible, but unfounded.

Part 1: Admissibility

119 The Counterclaim for revocation and the Infringement action are admissible

A Infringement action

120 The Claimant is entitled to bring the Infringement action before the Unified Patent Court pursuant Art. 47 (1) UPCA, because the Claimant is deemed to be the proprietor of the patent-in-suit.

121 Pursuant to Rule 8.5 (a) RoP, in relation to the proprietor of a European patent, the person entitled to be registered as proprietor under the law of each Contracting Member State in which such European patent has been validated shall be treated as the proprietor whether or not such person is in fact recorded in the register of patents. However, pursuant to Rule 8.5 (c) RoP, there is a rebuttable presumption that the person shown in each national patent register and the European Patent Register is the person entitled to be registered as proprietor.

122 The rebuttable presumption means that the burden of substantiation and proof now lies with the Defendant. He must substantiate that the Claimant is not the proprietor of the patent-in-suit and that the entry in the register is therefore incorrect. It is not sufficient to simply dispute the ownership of the patent or the effectiveness of a patent assignment. Rather, the Defendant must present specific facts from which it can be concluded that the Claimant is not the patent proprietor.

123 In the case at hand, the Claimant is shown as patent proprietor in the concerned national patent registers (see Exhibit P 4 and P 5) and in the European Patent Register (see Exhibit P 3) and is therefore to be considered the patent proprietor. The Defendants have not successfully rebutted this presumption.

124 Insofar as the Defendants object to the Claimant's allegedly late submission of documents such as the PPA and the PA (Exhibit P 25 and P 26), this objection is invalid because it is up to the Defendants to present facts that refute the Claimant's ownership of the patent-in-suit. However, the Defendants' further submissions are limited to merely disputing the content of the agreements, the fulfilment of the contractual conditions for the patent assignment and the signatories' authority to sign the agreements.

125 The only facts pointed out by the Defendants are the different colours and formats of individual pages of the agreements, which suggest that the agreements were composed of different documents or that only signature pages with different formats were exchanged. However, this and the legal opinions expressed by the Defendants on the interpretation of the agreements and the scope of authority of individual signatories do not allow the compelling conclusion that the entire patent assignment is invalid.

126 As the Claimant is considered the patent proprietor, it is in any case entitled to bring the Infringement action. Whether it is also entitled to claims arising from the patent for the period prior to acquisition of the patent-in-suit is, at most, a question of the merits of the action, unless it is already entitled to assert all claims arising from the patent on the basis of its ownership. However, a decision on this point is not necessary here.

B Counterclaim for revocation

127 A decision on the Counterclaim for revocation is not precluded by the fact that the Defendants stated at the end of the oral hearing that they want to set the condition. During the oral hearing,

the court merely raised the possibility of a conditional counterclaim for discussion and made it clear that such a conditional counterclaim could be reflected in a corresponding request. However, the possibility of a conditional counterclaim was not discussed further by the parties, no case law was cited if any was known at that time (see Local Division Mannheim, decision of 5 December 2025, UPC_CFI_414/2024), and no formal request was made (see the statements in the parallel cases: "we see sense in …" and "we would be willing …"), in particular, no specific condition was mentioned under which a decision should be made on the counterclaim or not. In this regard, the Defendants' statement at the end of the oral hearing is not sufficient.

Part 2: <u>On the merits</u>

128 Both the Counterclaim for revocation and the Infringement action are unfounded.

A <u>Subject matter of the patent-in-suit</u>

129 The invention of the patent-in-suit relates to an integrated circuit having a plurality of processing modules and a network arranged for transferring messages between processing modules and a method for exchanging messages in such an integrated circuit (Para. [0001]; the following citations of paragraphs without reference are those of the patent-in-suit).

I. <u>Prior art, problem and solution</u>

130 According to the patent-in-suit, systems on silicon show a continuous increase in complexity due to the ever increasing need for implementing new features and improvements of existing functions. This is enabled by the increasing density with which components can be integrated on an integrated circuit. At the same time the clock speed at which circuits are operated tends to increase, too. The higher clock speed in combination with the increased density of components has reduced the area which can operate synchronously within the same clock domain. This has created the need for a modular approach. According to such an approach, the processing system comprises a plurality of relatively independent, complex modules. In conventional processing systems the systems modules usually communicate to each other via a bus. As the number of modules increases, however, this way of communication is no longer practical for the following reasons. On the one hand, the large number of modules forms a too high bus load. On the other hand, the bus forms a communication bottleneck as it enables only one device to send data to the bus. A communication network forms an effective way to overcome these disadvantages (Para. [0002]).

131 Networks on chip (NoC) have received considerable attention recently as a solution to the interconnect problem in highly complex chips. The reason is twofold. First, NoCs help resolve the electrical problems in new deep-submicron technologies, as they structure and manage global wires. At the same time, they share wires, lowering their number and increasing their utilization. NoCs can also be energy efficient and reliable and are scalable compared to buses. Second, NoCs also decouple computation from communication, which is essential in

managing the design of billion-transistor chips. NoCs achieve this decoupling because they are traditionally designed using protocol stacks, which provide well-defined interfaces separating communication service usage from service implementation (para. [0003]).

132 Using networks for on-chip communication when designing systems on chip (SoC), however, raises a number of new issues that must be taken into account. This is because, in contrast to existing on-chip interconnects (e.g., buses, switches, or point-to-point wires), where the communicating modules are directly connected, in a NoC the modules communicate remotely via network nodes. As a result, interconnect arbitration changes from centralized to distributed, and issues like out-of order transactions, higher latencies, and end-to-end flow control must be handled either by the intellectual property block (IP) or by the network (para. [0004]).

133 Most of these topics have already been the subject of research in the field of local and wide area networks (computer networks) and as an interconnect for parallel machine interconnect networks. Both are very much related to on-chip networks, and many of the results in those fields are also applicable on chip. However, NoC's premises are different from off-chip networks, and, therefore, most of the network design choices must be reevaluated. On-chip networks have different properties (e.g., tighter link synchronization) and constraints (e.g., higher memory cost) leading to different design choices, which ultimately affect the network services. (para. [0005]).

134 NoCs differ from off-chip networks mainly in their constraints and synchronization. Typically, resource constraints are tighter on chip than off chip. Storage (i.e., memory) and computation resources are relatively more expensive, whereas the number of point-to-point links is larger on chip than off chip (para. [0006]). On the other hand, on-chip wires are relatively shorter than off chip and also fast and reliable. This allows a reduction in the buffer space in the routers because the communication can be done at a smaller granularity. In the current semiconductor technologies, wires are also fast and reliable, which allows simpler link-layer protocols (e.g., no need for error correction, or retransmission) (para. [0009]).

135 The patent specification lists various properties in which off-chip networks and NoC differ. It discusses reliable communication, the risk of deadlocks, data ordering, flow control, time-related features like best-effort services, latency or throughput.

136 The patent description further addresses the differences between on-chip interconnects and direct interconnects such as buses or switches, referring primarily to buses. Accordingly, introducing NoCs radically changes communication compared to direct interconnects (para. [0015] and [0016]).

137 The patent description states that, in general, a bus transaction involves a request and possibly a response. Modules issuing requests are called masters, and those serving requests are called slaves. If there is a single arbitration for a pair of request-response, the bus is called non-split. In this case,'the bus remains allocated to the master of the transaction until the response is delivered, even when this takes a long time. Alternatively, in a split bus, the bus is released after the request to allow transactions from different masters to be initiated.

However, a new arbitration must be performed for the response such that the slave can access the bus (para. [0017]).

138 For both split and non-split buses, both communication parties have direct and immediate access to the status of the transaction. In contrast, network transactions are one-way transfers from an output buffer at the source to an input buffer at the destination that causes some action at the destination, the occurrence of which is not visible at the source. The effects of a network transaction are observable only through additional transactions. A request-response type of operation is still possible, but requires at least two distinct network transactions. Thus, a bus-like transaction in a NoC will essentially be a split transaction (para. [0018]).

139 The patent specification mentions data ordering in bus systems and in NoC. On a bus, all transactions are traditionally ordered because the interconnect, being a direct link between the communicating parties, does not reorder data. However, on a split bus, a total ordering of transactions on a single master may still cause performance penalties, when slaves respond at different speeds. In a NoC, ordering becomes weaker. Global ordering can only be provided at a very high cost due to the conflict between the distributed nature of the networks, and the requirement of a centralized arbitration necessary for global ordering. Even local ordering, between a source-destination pair, may be costly. Data may arrive out of order if it is transported over multiple routes. In such cases, to still achieve an in-order delivery, data must be labeled with sequence numbers and reordered at the destination before being delivered; messages must comprises addresses (para. [0019] and [0020]).

140 The patent specification also discusses atomic chains of transactions already mentioned above. An atomic chain of transactions is a sequence of transactions initiated by a single master that is executed on a single slave exclusively. That is, other masters are denied access to that slave, once the first transaction in the chain claimed it. On a bus, atomic operations can easily be implemented, as the central arbiter will either (a) lock the bus for exclusive use by the master requesting the atomic chain, or (b) know not to grant access to a locked slave. In the former case, the entire bus is locked, but only for a short time, as no arbitration delay is required for subsequent transaction. In the latter case, the bus can still be used, only the slave has a longer locking time (para. [0021]). In a NoC, where the arbitration is distributed, masters do not know that a slave is locked. Therefore, transactions to a locked slaved may still be initiated, even though the locked slave cannot accept them. Consequently, to prevent deadlock, these other transactions in the atomic chain must be able to bypass them to be served. Moreover, the time a module is locked is much longer in case of NoCs, because of the higher latency per transaction (para. [0022]).

141 With regard to arbitration, the patent specification states that, in a bus, arbitration is centralised as there is only one arbiter component, and global as all the requests as well as the state of the interconnect are visible to the arbiter. Master modules request access to the interconnect, and the arbiter grants the access for the whole interconnect at once. When a grant is given, the complete path from the source to the destination is exclusively reserved (para. [0023]). In a NoC arbitration is also necessary, as it is a shared interconnect. However, in contrast to

buses, the arbitration is typically distributed, because it is performed in every router, and is based only on local information. Arbitration of the communication resources (links, buffers) is performed incrementally as the request or response advances (para. [0024]).

142 Buffering data of a master is used for buses and NoC to decouple computation from communication. However, for NoCs output buffering is also needed to marshal data due to packet transportation and control information added. The same applies to input buffering at the target in order to decouple computation from communication and – in a NoC – to un-marshal data (para. [0030]). However, flow control for input buffers differs significantly for buses and NoCs. Unlike destinations in bus systems, the destination of a transaction in a NoC cannot signal directly to a source that its input buffer is full. Consequently, if an input buffer is full, additional incoming transitions, possibly from multiple sources, are not accepted, and stored in the network. This can easily lead to network congestion, as the data could be eventually stored all the way to the sources, blocking the links in between (para. [0031]). To avoid input buffer overflow connections can be used, together with end-to-end flow control (para. [0032]). At connection set up between a master and one or more slaves, buffer space is allocated at the network interfaces of the slaves, and the network interface of the master is assigned credits reflecting the amount of buffer space at the slaves. The master can only send data when it has enough credits for the destination slave(s). The slaves grant credits to the master when they consume data (para. [0033]).

143 Other differences between NoCs and buses relate to latency and data formats (see para. [0026] to [0029]).

144 Against this backdrop, it is an objective of the invention (the problem underlying the patent-in-suit) to provide an integrated circuit and a method for exchanging messages in an integrated circuit with a more effective usage of the properties of the network (para. [0035]).

145 This objective is achieved by an integrated circuit with the features of claim 1 of the patent-in-suit, which can be structured as follows:

1. Integrated circuit

   comprising

   1.1 a plurality of processing modules (M; I; S; T) and

   1.2 a network (N; RN) arranged for providing at least one connection between a first (M;I) and at least one second module (S;T),

   and further comprising

   1.3 at least one communication managing means (CM) for managing the communication between different modules (M;I;S;T) and

   1.4 at least one resource managing means (RM) for managing the resources of the network (N);

2. the at least one connection

    2.1 comprises a set of communication channels each having a set of connection properties, the connection properties of the different communication channels of said connection being adjustable independently,

    2.2 supports transactions comprising outgoing messages from the first module (M; I) to the second module (S;T) and/or return messages from the second module (S;T) to the first module (M;I);

3. said first module (M;I) is adapted to issue a request (REQ) for a connection with at least one of said second modules (S;T) to said communication managing means (CM);

4. said communication managing means (CM) is adapted to forward said request (REQ) for a connection with communication channels each having a specific set of connection properties to said resource managing means (RM);

5. said resource managing means (RM) is adapted

    5.1 to determine whether the requested connection based on said communication channels with said specific connection properties are available, and

    5.2 to respond the availability of the requested connection to said communication managing means (CM);

6. a connection between the first (M;I) and second module (S;T) is established based on the available properties of said communication channels of said connection.

II.   Claim construction

146 In view of the dispute of the parties, the interpretation of claim 1 of the patent-in-suit is necessary.

1.   Legal framework for claim interpretation

147 In accordance with Art. 69 (1) EPC and the Protocol on its interpretation, a 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 the strict, literal meaning of the wording used. 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 subject-matter for which the patent proprietor seeks protection (Court of Appeal, UPC_CoA_335/2023, Decision of 26 February 2023 in conjunction with Decision of 11 March 2024 – NanoString v 10x Genomics; UPC_CoA_1/2024, Order of 13 May 2024 – VusionGroup v Hanshow; UPC_CoA_768/2024, Order of 30 April 2025 – Insulet v EOFlow, UPC_CoA_405/2024, 19 June 2025 –

Alexion/Amgen; UPC_CoA_579/2025, Order of 7 November 2025 – OTEC/STEROS). Rather, Art. 69 EPC and its Protocol establish a primacy of the claims. The underlying legal principle is legal certainty.

148 These principles for interpreting a patent claim apply both to the question of patent infringement and to the question of validity. The understanding of a claim by the skilled person must be consistent for all purposes of the evaluation of infringement and validity (Court of Appeal, UPC_CoA_335/2023, Order of 26 February 2024 – NanoString v 10x Genomics).

2. Skilled person

149 The skilled person is to be defined as an electrical engineer or computer scientist with practical experience in the field of SoC and NoC technologies and with general notions of computer networks and with basic knowledge of electrical engineering or computer engineering acquired as part of his/her studies. This definition largely corresponds to the definition suggested by the Claimant in its Defence to the Counterclaim. However, insofar as Claimant argues that the skilled person would not be a specialist in, for example, computer networks, this is not convincing. As shown by the background section of the patent-in-suit, computer network technology cannot be considered a remote field from NoCs and is therefore generally known to the skilled person.

3. General structure of and communication in an IC according to the invention

150 According to claim 1 of the patent-in-suit, an integrated circuit as claimed comprises several processing modules, a network, one or more communication means and one or more resource managing means (feature group 1).

151 Communication between the modules takes place via connections provided by the network (feature 1.2). Such a connection must be established (feature 6). This requires that a first module issues a request for a connection with a second module to the communication manager (feature 3). The communication manager forwards the request for a connection, including required connection properties, to the resource manager (feature 4), which determines the availability of the required connection, including the required connection properties (feature 5.1). It informs the communication manager of the availability of the required connection (feature 5.2), which is established based on the available connection properties (feature 6).

4. Network

152 The integrated circuit according to the invention comprises a network arranged for providing at least one connection between a first and at least one second module according to feature 1.2. In fact, the network is the interconnect of the plurality processing modules of feature 1.1. However, not every interconnect or arrangement that is suitable for providing a connection

between modules can be regarded as a network within the meaning of claim 1. Taking into account the description of the patent-in-suit, a network according to claim 1 must instead be understood as a network on chip (NoC) which connects the several modules of the integrated circuit by means of lines connected via nodes (multi-hop nature), so that the lines can be shared, which structures and manages these lines, and which decouples communication from the actual computing tasks of the modules by using a separate protocol stack, which provide well-defined interfaces separating communication service usage from service implementation.

153 If the description of the patent-in-suit refers to a network, then it always refers to a network on chip as defined above (para. [0003]). The patent-in-suit delimits the network on chip from other existing on-chip interconnects like buses, switches, or point-to-point wires (para. [0004] and [0015]-[0033]) as well as from local and wide area networks (computer networks or off-chip networks) (para. [0005]-[0014]).

154 In particular, an interconnect established solely via buses or other point-to-point connections cannot be regarded as a network within the meaning of the patent-in-suit and claim 1. This does not preclude the use of a bus within a network on chip. However, it must be noted that, as the patent-in-suit expressly states, a network (on chip) differs from existing on-chip interconnects such as buses, switches, or point-to-point wires, where the communicating modules are directly connected to each other. In contrast, the modules connected via a network on chip communicate remotely via network nodes, which raises other issues, for example interconnect arbitration changes from centralised to distributed and out-of order transactions, higher latencies, and end-to-end flow control must be handled (para. [0004] and [0015]). Therefore, a network within the meaning of claim 1 cannot be established exclusively by a bus system, point-to-point connections or other direct connections between the modules.

155 In its introduction, the patent-in-suit deals, among other things, with the implications for arbitration and connection properties when communication takes place via a NoC rather than via a direct interconnect like a bus or a switch (para. [0015] ff.). The patent in suit describes in detail modified requirements or even disadvantages for transaction ordering, atomic chains of transactions, arbitration, addressing, latency, data format, buffering and flow control (para. [0019]-[0032]) when a NoC is used instead of a bus, whereby the bus is explicitly only one example of a direct interconnect and the explanations also apply mutatis mutandis to switches (see para. [0016]). In particular, the time a module in a NoC is locked in case of a deadlock at atomic chain transaction is much longer compared to buses because of the higher latency (para. [0022]); input buffer overflow and network congestions may occur as the destination of a transaction cannot signal directly to a source that its input buffer is full (para. [0032]).

156 These drawbacks arise precisely because in a NoC the modules are separated by one or more nodes and are not directly connected (cf. para. [0015]). This is where the objective of the invention addressed by the patent-in-suit comes in as this is to provide an integrated circuit and a method for exchanging messages in an integrated circuit with a more effective usage of the properties of the network ([0035]). However, this presupposes that a NoC as defined above is used in the integrated circuit and not a bus or other point-to-point connection.

157 Another interpretation of claim 1 cannot be based on the preferred embodiments described in the patent specification and the explanation that the interconnect is embodied as a network on chip NoC which may include wires, bus, time-division multiplexing, switch, and/or routers within a network (para. [0048]). As already mentioned, the term "network on chip" or "network" within the meaning of claim 1 does not exclude buses or switches within the network. However, a bus or a switch on its own cannot be understood as a network in the sense of the patent-in-suit. Nor can this be inferred from the passage quoted above as it states "bus (…) within a network".

5. Connection

158 As can be seen from the overview at the begin of this section, the term "connection" is decisive for the subject matter of patent claim 1 and its limitations. A connection within the meaning of patent claim 1 is not just any connection or route between two modules for the purpose of transmitting data. Instead, the claim and the description of the patent in suit set out certain requirements for a connection, specifying the properties it should have and what it should be capable of doing. This also has an impact on the other components of an integrated circuit according to the invention and its data transmission.

a)

159 The term „connection" is defined by the patent-in-suit itself which is its own lexicon in this respect. Accordingly,

> "connections are introduced to describe and identify communication with different properties, such as guaranteed throughput, bounded latency and jitter, ordered delivery, or flow control. (…) Connections as defined here are similar to the concept of threads and connections from OCP and VCI. Where in OCP and VCI connections are used only to relax transaction ordering, we generalize from only the ordering property to include among others configuration of buffering and flow control, guaranteed throughput, and bounded latency per connection." (para. [0052])

b)

160 Further requirements for a connection can be derived in detail from the patent claim itself and the description of the patent-in-suit.

(1)

161 The skilled person learns from patent claim 1 that <u>a connection is provided by the network</u> and <u>extends from a first module to a second module</u> (feature 1.2). Patent claim 1 furthermore requires that <u>a connection comprises a set of communication channels</u> each <u>having a set of connection properties</u> which are independently adjustable for every communication channel of a connection (feature 2.1).

162 The requirement for a set of communication channels is related to the connection's support of transactions (feature 2.2). Patent claim 1 defines a transaction as comprising outgoing messages from the first module to the second module and/or return messages from the second module (feature 2.2). The concept of transactions for communication between modules on an integrated circuit was known in prior art, particularly when buses were used as interconnects (para. [0017]). In its introduction, the patent-in-suit describes the differences and challenges involved in transferring this concept to a network on chips (see inter alia para. [0018], [0022], [0032]). As a transaction always involves a request and, depending on the request, possibly a response, patent claim 1 refers to outgoing messages and/or return messages. In any event, patent claim 1 requires that a connection supports transactions as they were known in the prior art and described in the patent in suit (para. [0017]). Consequently, a connection within the meaning of the patent-in-suit comprises a set of communication channels (feature 2.1), i.e. at least two communication channels, one for the outgoing message and one for the possible return message of a transaction (see para. [0048]).

163 The communication channels and, consequently, the connection comprising these communication channels have a set of connection properties. According to the definition cited above, a connection is particularly characterized by its connection properties. The definition also lists examples for them, namely guaranteed throughput, bounded latency and jitter, ordered delivery, or flow control (para. [0015]). Further examples are the lossiness, transmission termination, transaction completion, data correctness, priority, or data delivery (para. [0049] and [0068]).

(2)

164 However, a connection with specific connection properties does not simply exist. Rather, according to the technical teaching of the patent-in-suit, a connection must be established. This requires a request of the first module that wishes to initiate communication with a second module. To this end, the first module issues a request for a connection to the communication manager (feature 3). The communication manager forwards the request to the resource manager (feature 4). At this stage, at least, the request includes the specific connection properties desired for the communication channels of the connection with the second module (see feature 4). This does not preclude the first module from already issuing the request with information regarding the needed connection properties (see para. [0054]).

165 Then the resource manager determines whether the requested connection based on the communication channels with the desired specific connection properties is available and responds the availability of the requested connection to the communication manager (feature group 5). Finally, a connection between the first and second module is established based on the available properties of the communication channels of the connection (feature 6). This does not necessarily mean that a connection is only established when the available connection properties correspond to those requested. Rather, it can be inferred from dependent patent claim 2 that the communication manager may also reject establishing a connection if the available connection properties are not sufficient to perform the requested connection.

Conversely, it must then also be able to accept a connection that does not have the requested properties as described in the patent specification (para. [0056]).

166 The availability of a connection with communication channels with the requested connection properties depends on the availability of network resources. The patent description expressly states:

> "The properties require resources to be implemented (e.g., throughput requires slot reservations, flow control requires buffering). Therefore, a connection requiring some properties is opened or not depending on the availability of these resources. The availability of the connection properties correspond[s] to the ability of the network to fulfill or provide the resources for the connection properties identified in the connection setup request." (para. [0055]).

It is the resource manager which enquires whether the network resources required for the requested connection are available and whether a connection based on these resources is possible (feature 5.1). The resource manager is the functional unit that has an overview of the network resources and compares them with the required connection properties as it determines the availability of the requested connection with the specific connection properties (feature 5.1). The patent description relates in this respect to a corresponding property table (para. [0065]).

167 Patent claim 1 does not explicitly mention whether the resource manager also allocates the necessary resources as it is described in the patent specification (para. [0055]). Allocation of network resources means that, for example, slots and/or buffers are reserved or that bandwidth is provided along the route between the first module and the second module in order to establish the requested connection (see para. [0055] and [0056]). This may also require the configuration of nodes and network interfaces. Since the resource manager determines the availability and also responds it to the communication manager (feature 5.2) it will, consequently, at least also initiate the allocation of the network resources for the desired connection.

168 As already mentioned, the connection will be established if the requested connection properties are available or if the communication manager is allowed to accept a connection even if the available connection properties do not completely correspond to the requested connection. It should be noted that a connection cannot only be opened but also closed. This is not expressly mentioned in the patent claim but follows from the limited network resources and the fact that (new) connections can be established. The patent specification describes that typically the communication manager issues a request to the resource manager to reset the connection or the connection properties (para. [0056]). It generally states

> "Depending on the requested services, the time to handle a connection (i.e., creating, closing, modifying services) can be short (e.g., creating/closing an unordered, lossy, best-effort connection) or significant (e.g., creating/closing a multicast guaranteed-

throughput connection). Consequently, connections are assumed to be created, closed, or modified infrequently, coinciding e.g. with reconfiguration points, when the application requirements change." (para [0062])

As stated by the patent specification, whether connections are opened and closed more or less frequently ultimately depends on the circumstances of the individual case.

c)

169 As a result, a connection within the meaning of patent claim 1 can be described as a certain temporary state of the network characterised by the guaranteed allocation of specific network resources for the transmission of data and messages between two modules whereby the establishment (and consequently closing) of connections takes place in a dedicated process that requires a connection request and involves a communication manager and, in particular, a resource manager as an independent functional unit that determines and communicates the availability of the network resources for the requested connection.

170 It is important to note that the properties allocated to a connection apply to the entire route between the modules. Since a connection can be opened and closed, and connection properties can therefore be changed, this implies that routers, switches and interfaces along the route are configured accordingly to provide the connection properties. It should also be noted that, regardless of the connection properties allocated in each case, establishing a connection always refers to the communication channels for messages in both directions, i.e. outgoing messages and return message (if the latter is sent).

d)

171 It also follows from the above that a transaction can only begin and a message within a transaction can only be sent after a connection has been established. Accordingly, the patent specification expressly points out that

„the connections according to the embodiments of the invention must be first created or established with the desired properties before being used. This may result in resource reservations inside the network (e.g., buffer space, or percentage of the link usage per time unit)." (para. [0057])

This passage not only describes the third embodiment of the patent specification, but also applies in general, since patent claim 1 also requires requesting and establishing a connection that comprises the set of channels and supports transactions comprising outgoing messages and/or return message between a first and a second module. These messages are transmitted via these communication channels and therefore necessarily presuppose the connection to be established.

172 This does not exclude that the connection request sent by the first module to the communication manager is linked to the transaction request, i.e. the outgoing message. For

example, it is technically conceivable that the communication manager is located in an interface between the module and the network. From there, however, the transaction request can only be forwarded to the second module once the connection has been established, which requires the requests to be handled separately. Whether this makes sense in technical terms does not need to be decided. In any case, it is not conceivable that the transaction message could be transmitted before a connection has even been established.

173 It is therefore not sufficient for a message within a transaction to contain only certain bits that tell one router after another how to process the data packet if a connection has not been established beforehand and the network nodes have not been configured accordingly. Such a distributed approach, which is performed in every node and is based only on local information, is known from prior art (see para. [0024]) and does not correspond to the technical teaching of the patent-in-suit. The technical problem underlying the patent-in-suit is that a NoC as a distributed interconnect has drawbacks or, at any rate, different requirements with regard to data ordering, arbitration, latency or buffering and flow control compared to a direct interconnect such as a bus (see for example para. [0021], [0024], [0032]). The patent-in-suit therefore specifies the objective of more effective usage of the properties of the network.

174 This is solved by requiring that connections be requested for transactions, to which network resources are allocated and the establishment of which depends solely on the available network resources. Even more flexibility in configuring connections and, hence, better resource allocation per connection is achieved by allocating the connection properties for the outgoing and return parts of connections independently (para. [0057]). With this solution, the patent transfers the functionalities known from direct connections such as buses to NoC – albeit not identically due to the technical differences between direct and distributed interconnects. Even in buses, the modules had to go through an arbitration phase in which they requested access to the bus, which was blocked as long as it was being used by other modules (see para. [0017]). Once granted, the module had full access to the bus resources due to the direct connection to the second module (see para. [0015]). Requesting connections and establishing them with the allocation of network resources in a NoC is similar to this, albeit more dynamic. The establishment of connections for NoC does not even seem to have been unknown in prior art. The patent describes the use of connections to prevent overflow of the input buffer at the target module by allocating buffer space at connection set up (para. [0033]). The establishment of connections, the determination of connection properties and the allocation of network resources in general now solve the more general problem of efficient resource utilisation.

6. Communication managing means and resource managing means

175 Finally, the terms "communication managing means" and "resource managing means" in features 1.5 and 1.6 need to be explained. These are functional terms that only describe what the managers must be able to do. How this is ultimately implemented is left to the skilled person. From this, the communication managing means and resource managing means

comprise hardware components and/or software components that enable them to fulfil their function, in the case at hand to manage the communication between different modules (feature 1.3) and to manage the resources of the network (1.4).

176 It should be noted that, the terms "communication managing means" and "resource managing means" may overlap in terms of content. Managing communication between different modules connected via a network according to feature 1.3 may include the planning, organization, control, monitoring, evaluation and/or optimization of data flow within the network. It is immediately apparent that this general term can also include elements of resource management if communication management relates to the resources of the network. Conversely, resource management can be regarded as communication management insofar as it has an impact on the communication between the modules.

177 This is also implicitly stated in the patent specification. Accordingly, the "resource manager RM" not only performs the resource management task of "checking the availability of the requested resources", but also communication management tasks by, among other things, allocating the resources required for communication between two modules using tables, as well as reserving and, if necessary, establishing a connection (see para. [0055] and [0056]). Conversely, a communication managing means can refuse to establish a connection and thus influence the use of the resources actually used by the communication network (para. [0041] and [0056]).

178 As a result, the terms "communication managing means" and "resource managing means" cannot clearly be distinguished in every respect. However, it should be noted that, according to feature 4 and feature group 5, the communication manager must receive the connection request and forward it to the resource manager, which determines the availability of the connection and informs the communication manager accordingly. In this respect, the patent claim contains a clear assignment of tasks and distinguishes between both managers.

B   Counterclaim for revocation

179 The Counterclaim for revocation is unfounded.

I.   Novelty

180 The technical teaching of the patent-in-suit is novel pursuant to Art. 54 EPC.

181 As already clarified in UPC case law, it is a prerequisite for the acceptance of lack of novelty that the claimed subject matter is directly and unambiguously derivable from the prior art. The technical disclosure in a prior art document must be considered as a whole (CoA, Order of 25 September 2024, UPC_CoA_182/2024, para. 123). The Court must ascertain what the skilled person would derive directly and unambiguously using his/her common general knowledge and seen objectively and relative to the date of filing, from the whole of the prior art document,

whereby implicitly disclosed subject-matter, i.e. matter that is a clear and unambiguous consequence of what is explicitly mentioned, shall also be considered as part of its content (see with regard to added matter: Court of Appeal, 2 October 2025, UPC_CoA_764/2024, UPC_CoA_774/2024 – expert e-Commerce/Seoul Viosys; 14 February 2025, UPC_CoA_382/2024 – Abbott/Sibio). An invention is to be considered part of the state of the art when it is found clearly integrally, directly and unambiguously in one single piece of prior art and it is identical in its constituent elements, in the same form, with the same arrangement and the same features (LD Munich, Decision of 31 July 2024, UPC_CFI_233/2023; CD Paris, Decision of 28 July 2025, UPC_CFI_239/2024). This principle applies also when a novelty attack is based on a single piece of prior art made available to the public by use (LD Milan, Decision of 27 October 2025, UPC_CFI_178/2024 and UPC_CFI_432/2024).

1. „Goossens" (Exhibit BP-CR 1)

182 The scientific publication "Networks on Silicon" by Goossens et al., submitted as Exhibit BP-CR 1 (hereinafter "Goossens"), does not disclose the technical teaching of patent claim 1.

183 "Gossens" was published in the IEEE journal on 7 August 2002 and is therefore prior art to the patent-in-suit. It relates to systems on silicon (SOS), their hardware design and the needed software concepts. With regard to the hardware architecture, the authors rely on the intellectual-property block (IP) re-use model and propose a network on silicon (NOS) to implement the communication between these IPs. In this regard, a NOS is a hardware architecture together with a programming model. "Gossens" focusses on the guaranteed services, which serve as the basis for the programming model and as a requirement for the NOS hardware architecture. They ensure predictable performance, simplifies IP integration, and aids in maintaining compositional design integrity.

a) Feature group 1

184 The SOS according to Goossens is an integrated circuit that comprises a plurality of processing modules in form of IP blocks (features 1 and 1.1).

185 The NOS represents a Network on the SOS arranged for providing at least one connection between a first and a second module (features 1.2) as „the aim of the transport layer of the NOS is to provide reliable end-to-end services over connections" (p. 2, right col. l. 12-13 of BP-CR 1; quotations by line and column in this section are taken from Exhibit BP-CR 1 - Goossens). Furthermore, "IPs can set up and remove connections" and "GT channels are created and removed with BE packets that reserve a path through the network, subject to resource availability" (p. 3, left col. l. 46-51). Whether these are connections within the meaning of the patent in suit, see the explanations on features 2 to 6.

186 "Goossens" also discloses at least one communication managing means and at least one resource managing means (features 1.3 and 1.4). It mentions that, on the transport layer,

"end-to-end services over connections are provided through communication management" (p. 2, right col. l. 12-14). This implies communication management and resource management since end-to-end services require network resources which are provided over connections the management of which can be subsumed under communication management. There must be hardware and/or software components in order to handle communication and resource allocation. With regard to the functional definition of the communication manager and the resource manager in features 1.3 and 1.4, a NOS according to "Goossens" must contain corresponding hardware and/or software means. Therefore, the arrangement on the transport layer should not prevent the qualification of theses means as a communication manager.

187 "Goossens" further describes that "quality-of-service managers can effectively observe and steer a NOS (…)" (p. 3, right. col. l. 30-32)."Observing" and "steering" also require hardware and/or software components that are able to manage the communication and the resources of the network, in particular, if connections or channels for specific services can be created and removed. This can also be inferred from the quotation in Goossens, that "a NOS that offers guaranteed services must accurately model its resources to offer those services (p. 3 left col. l. 19-20 of BP-CR 1). In this context, "Gossens" mentions the quality-of-service manager to reconfigure the SOS (p. 3, left col. l. 22-23), which can be subsumed under resource management.

188 It should be noted that Goossens outlines typical tasks for communication management and resource management and discusses resource management in general, but does not go into detail about the processes involved, particularly with regard to establishing connections (more on this below).

b) <u>Feature group 2</u>

189 In accordance with "Goossens", a "connection combines multiple channels" whereby "a channel implements a simplex point-to-point communication between two network interfaces" (p. 3, left. co. l. 37-39 and 43). As "a channel can have a combined throughput and latency guarantee (GT) or be best effort (BE)" (p. 3, left col. l. 39-41), the first part of feature 2.1 is disclosed in "Goossens".

190 However, the second part of feature 2.1 is not directly and unambiguously disclosed. "Goossens" does not explicitly reveal that the connection properties of the different communication channels of a connection are independently adjustable, nor is this feature the unambiguous consequence of the explicit disclosure content. While "Goossens" states that "a channel can have a combined throughput and latency guarantee (GT), or be best effort (BE)" and "a connection combines multiple channels and can include flow control and re-ordering for lossless in-order transmissions" (see p. 3, left col. l. 39-41 and 43-45), it cannot be unambiguously derived from this whether the channels can be adjusted independently if combined in one connection. It is also possible that the channels within one connection always have the same connection properties. Other passages ("delivery order is not guaranteed over

different paths or channels" – p. 3, left. col. l. 42-43) also do not point clearly in one direction or the other. "Goossens" simply remains silent on the matter, and there is no reason to assume that the channels in a connection can be configured independently.

191 Feature 2.2 is neither disclosed in "Goossens". The term "transaction" refers to the combination of a request and a possible response triggered by the request. Even though this has no impact on the connection itself that supports such transactions, as this only requires a bidirectional or duplex connection through which messages can be sent in both directions, the term "transaction" at least places requirements on the modules which send the outgoing and return messages. In this respect, "Goossens" merely discloses that "in a re-use model IPs that are bought or re-used cannot be adapted to each SOS they are used in. They will interact in many different ways (event-driven, data streaming, message passing, shared memory, etc.)" (p. 2, right col. l. 2-7). Nothing can be inferred from this regarding the execution of transactions in the sense of request-response communication. The mention of duplex connections (p. 2, right col. l. 21-23) is not sufficient in this regard.

c) <u>Feature 3</u>

192 "Goossens" does not directly and unambiguously disclose feature 3.

193 For the disclosure of feature 3, the Defendants rely on the statement in "Goossens" that the NOS can decline a service request from an IP (see p. 3, left. col. l. 27-28), and conclude from this that the IP is adapted to issue a request for a connection to the communication managing means. However, a service request does not necessarily equate to a connection request. Rather, the entire section 3. "Guaranteed services" relates to the design and the programming of an SOS, in particular the configuration of IPs and the NOS on an SOS (p. 2, right col., l. 33-44). In this context, "Goossens" lists the advantages for programming individual IPs, if a NOS grants guaranteed services (p. 2, right col., l. 45 to p. 3, left col., l. 6). Even if this configuration may be generated at run-time by an application manager (p. 2, right col., l. 37-40), or an application or quality-of-service manager reconfigures the SOS at run-time, there is no indication that a service request is related to the establishment of a specific connection between a first and a second module within the meaning of feature 3. Rather, the (re-) configuration of an SOS and granting or denial of guaranteed services upon request of an IP appear to be related to the general use of network capabilities by that IP and to general communication properties independent of a specific connection. "Communication failures are therefore restricted to the configuration phase of the IP, instead of every communication action" (p. 3, left col., l. 3-5; see also l. 25-28) as Goossens expressly states.

194 Nothing else can be inferred from the statement in "Goossens" that IPs can set up and remove connections (p. 3, left col., l. 46). It is not disclosed that the IPs are necessarily required to request a connection, nor can it be directly and unambiguously derived from the explanation of the transport layer which aims to provide end-to-end services over connections. The connection between setting up and removing connections on the one hand and the

aforementioned service request on the other is also unclear, meaning that no conclusions can be drawn from this either.

d) Feature 4

195 Furthermore, „Goossens" does not describe the interplay between a communication manager and a resource manager. Even if the skilled person knows that an NOS, which organises communication between IPs, grants and denies service requests, creates and removes channels, and models its resources, requires some form of communication management and resource management (see above), "Goossens" does not teach the skilled person how communication and resource management are designed in terms of hardware and software, in particular how the process of establishing a connection works in detail. "Goossens" does not explain whether there is a connection request and how it is handled, in particular that it is forwarded by the recipient, who can be understood in the broadest sense as a communication manager, to a resource manager. Nor can this be implicitly inferred from the prior art document. It merely points out that "Quality-of-service managers can effectively observe and steer a NOS because it behaves predictably in terms of performance and cost" (p. 3, right col., l. 30-31).

196 In this context, the Defendants refer, on the one hand, to connection management on the transport layer as the recipient of a service request and, on the other hand, to the application and quality-of-service manager, which observes and steers the NOC and is regarded by the Defendants as a resource manager that must necessarily receive the service request. However, "Goossens" does not contain any information about the hardware and/or software implementation of connection management and quality of service management, nor about how they interact. Nor does he explain to which specific unit the connection request is directed and how it is further processed, in particular whether it is forwarded to another unit. In this respect, Goossens only provides an initial abstract concept for a NOS, but no further details about the process flow. Feature 4 is therefore not disclosed.

e) Feature group 5

197 „Goossens" does not disclose feature group 5.

198 The Defendants themselves state that "Goossens" does not explicitly describe based on which considerations a service request is granted or denied. As already explained above, there are already serious doubts as to whether a service request can be regarded as a connection request within the meaning of feature 3 and what role the communication and resource managing means play with regard to service requests and the establishment of connections. For this reason alone, it cannot be concluded that Goossens discloses the determination step upon a request for a connection based on certain communications channels with specific connection properties within the meaning of feature 5.1 and the response step within the meaning of feature 5.2.

199 The Defendants draw the conclusion from the statements "GT channels are created and removed with BE packets that reserve a path through the network, subject to resource availability" (p. 3, left col., l. 49-51) and "a NOS that offers guaranteed services must accurately model its resources to offer those services" (p. 3, left col., l. 19-20) that "Goossens" implicitly discloses to the person skilled in the art that the NOS determines whether the necessary resources for the requested service are available and communicated via the transport layer to the requesting IP. This cannot be accepted.

200 The quotation from page 3, left column, lines 49 to 51 ("GT channels are created (…) subject to resource availability") cannot be interpreted as meaning that the availability of GT channels is determined within the meaning of feature 5.1. Rather, it can be assumed that the BE packets reserve a path whose concrete topology is selected dynamically according to the resources available at the time the GT channel is established. This can be inferred from the preceding explanations in Goossens, which indicate that connections are always set up regardless of the availability of specific connection properties.

201 As a consequence, the availability of the requested connection is not responded within the meaning of feature 5.2. Furthermore, as with feature 4, "Goossens" does not contain any details about the implementation of managers in terms of hardware and software, nor does it explain their interaction. Therefore, it is not disclosed that a resource manager informs a communication manager about the availability of the requested connection.
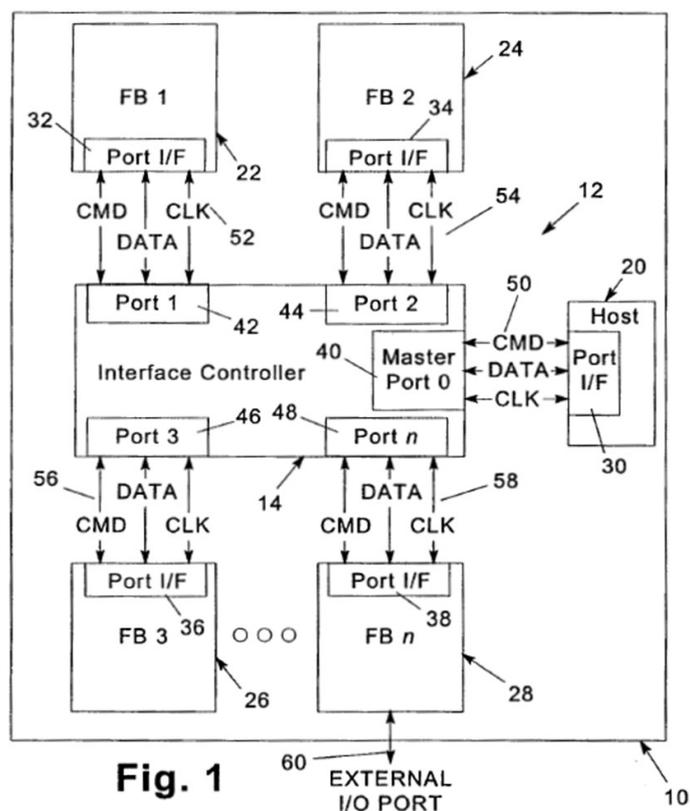
f)   <u>Feature 6</u>

202 Finally, feature 6 of patent claim 1 is not disclosed in "Goossens". The Defendants rely on the passage that "a service request may be granted or denied by the network" (p. 3, left col. l. 2-3 and 27-28). However, as already mentioned, the relation between a service request on the one hand and setting up or removal of a connection on the other is not entirely clear in "Goossens". Insofar as the Defendants refer to the statement in "Goossens" that "GT channels are created and removed (…) subject to resource availability" (p. 3, left col. l. 49-51), reference can be made to the explanations with regard to feature group 5. It is neither explicitly nor implicitly disclosed that a connection comprising a set of communication channels is established based on the available properties determined and responded in preceding steps upon a specific connection request.

2.   <u>„Levy" (Exhibit BP-CR 2)</u>

203 The patent application WO 00/33201, submitted as Exhibit BP-CR 2 (hereinafter: "Levy"), was published on 8 June 2000, hence before the priority date claimed by the patent-in-suit.

204 The invention in „Levy" describes a circuit arrangement and a method that interfaces multiple functional blocks within an integrated circuit device via a concurrent serial interconnect that is

capable of routing separate serial command, data and clock signals between functional blocks in the device (see figure 1 below).

Fig. 1

a) Feature 1.2

205 "Levy" does not disclose a network within the meaning of feature 1.2 of patent claim 1. "Levy" itself only refers to an interface for interconnecting multiple functional blocks together in an integrated circuit device (p. 2 l. 6-8 of BP-CR 2; quotations by page and line in this section are taken from Exhibit BP-CR 2 – Levy) or to a concurrent serial interconnect. It does not refer to any kind of network.

206 "Levy" also delimits the concurrent serial interconnect disclosed from buses, whose disadvantages it sees in the large number of lines between the various components of the bus, the limitation of the overall speed and thus the potential bandwidth, and in the fact that only one component can transmit information over a parallel bus at a time (p. 3 l. 4-23). However, this does not make the interface of "Levy" a network within the meaning of the patent-in-suit.

207 „Levy" describes that the concurrent serial interconnect utilises a plurality of serial ports that are selectively coupled to one another by an interface controller to define one or more logical communication channels between two or more of the serial ports. It includes a plurality of serial ports under the control of an interface controller, and coupled via a plurality of direct point-to-point serial interconnects to different functional blocks in the circuit arrangement. Information is passed by the functional blocks associated with the coupled serial ports via the

communication channels established between two serial ports by the interface controller (p. 7 l. 4-10).

208 Such an arrangement differs from a network within the meaning of the patent-in-suit in that it lacks a distributed structure, because each functional block is directly connected to the interface controller, which directly interconnects the requesting block with the addressed block by means of a logical channel. It lacks the multi-hop nature that results from the various network nodes through which the modules are connected. As a result, the arrangement according to "Levy" is more like a single switch. However, a switch – and also the concurrent serial interconnect – cannot be regarded as a network within the meaning of the patent-in-suit.

b) <u>Feature 2.1</u>

209 Furthermore, the connections established by the concurrent serial interconnect between the functional blocks in "Levy" do not have a specific set of connection properties, which are requested, determined and established, meaning that features 2.1, 4 and 5.1 are also not disclosed.

210 The functional blocks do request a connection from the interface controller in order to establish a logical connection. In addition to a start bit, a stop bit and a channel request token, the channel request command format contains bits for the channel type ('Type'), the number of target ports ('NumPorts') and the target port IDs ("TargetPorts") (see Table XI on p. 19 l. 18-24).

211 The "TargetPorts" bits cannot be considered a connection property as they merely represent the addressed target block. The "NumPorts" bits cannot be regarded as a connection property either. The bits merely indicate the number of target ports. The Defendants have not explained what influence the number of ports has on the availability of a connection, its determination and its establishment. Assuming that the establishment of a connection with certain connection properties depends on the availability of certain network resources, it is not clear which network resources these should be in the case of the number of target ports. Irrespective of this, however, it is also not clear that this part of the channel request command has any significance at all for the establishment of a connection.

212 The situation is different with the "Type" bits, which are used to indicate whether a unidirectional or bidirectional connection is required. Since the interface controller forwards a channel request command to the target port(s) which are able to accept or deny establishment of a channel, it cannot be ruled out that the availability of the target block depends on whether it can only receive messages (unidirectional) or must also send them (bidirectional). In this respect, the "Type" part of the command may be accompanied by a determination of the availability of this type of connection. However, a single connection property (here: "Type") is not a set of connection properties according to feature 2.1.

213 Furthermore, it is not apparent that this connection property can be adjusted independently for the different communication channels of a connection (second part of feature 2.1). According to 'Levy', individual communication channels can be requested and set up independently of each other. However, a connection with a set of communication channels at the same time and different connection properties – especially for incoming and outgoing messages – cannot be requested and established. According to Levy, broadcast channels with multiple targets are only permitted with the unidirectional type, while bidirectional channels support only a single target (p. 20 l. 10-12). This means that all connection properties, i.e. unidirectional or bidirectional, can only be requested and set up uniformly. There is no connection with multiple channels of different types. The Defendants did not present any connection properties other than channel types.

214 Insofar as the Defendants refer to a route command & control bloc 80 within the interface controller, which functions as an arbiter to arbitrate and allocate among the channels and grant ports access to the channels based upon a predefined arbitration scheme (p. 11 l. 12-15), its arbitration decision may have an influence on the establishment of channels and connections depending on their availability. However, nothing follows from this for feature 2.1. There is no indication as to whether and which connection properties play a role and whether the properties of two channels of a connection can be adjusted independently of each other. It is also possible that these are arbitration rules which, regardless of the requested connection properties, determine which channel requests are granted. The fact that the arbitration rules are either programmed by an external host or stored in a storage device (p. 11 l. 16-22) does not contradict this.

c) Features 1.3, 1.4, 2.2 and 3

215 "Levy" discloses the features 2.2 and 3. It is undisputed that a connection between to functional blocks of the concurrent serial interconnect may support transactions with request messages and response messages (p. 15 l. 3-25). Furthermore, a functional block is adapted to issue a connection request in form of the aforementioned channel request command.

216 The Claimant also rightly does not dispute the applicant's submission that, within the interface controller, the route request block 82 is to be regarded as the communication manager and the route command & control block 80 as the resource manager within the meaning of features 1.3 and 1.4. The blocks are depicted below in the Figure 3 of "Levy", illustrating a block diagram of a three channel implementation of an interface controller.
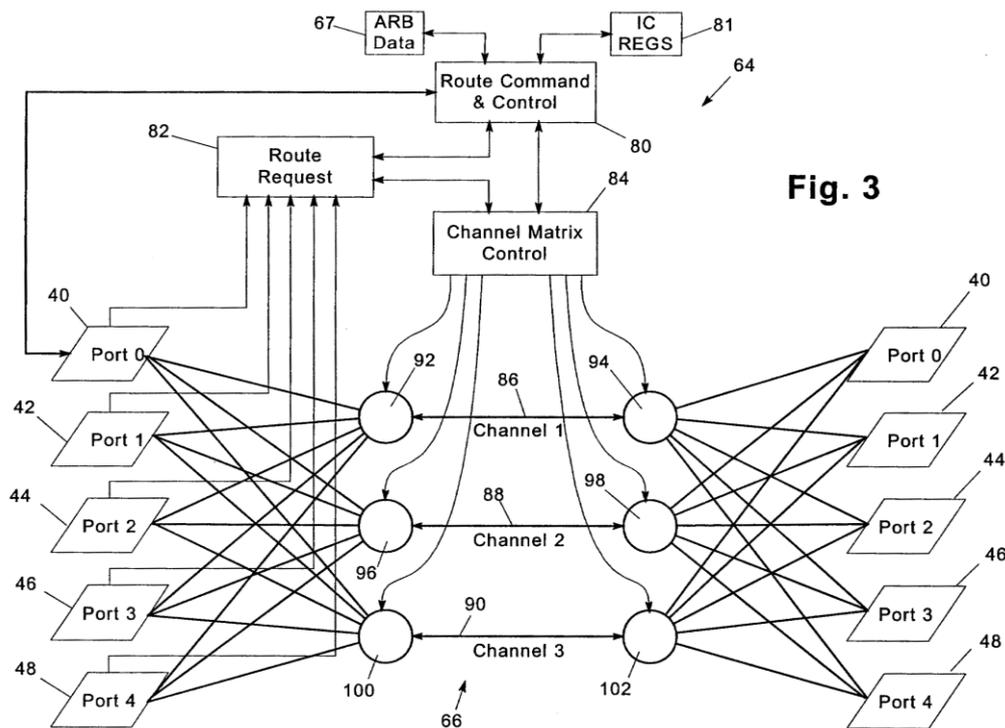
Fig. 3

d) Features 4 and 5

217 Feature 4 and feature group 5 are not disclosed in "Levy".

218 According to Levy, channel requests are forwarded from a port to route request block 82. They are then forwarded to route command & control block 80, which functions as an arbiter to arbitrate and allocate among the channels and grant ports access to the channels based upon a predefined arbitration scheme (p. 11 l. 7-15) as already mentioned.

219 However, if the channel request does not comprise a set of connection properties, there is no connection request within the meaning of feature 4 that is forwarded from the communication manager to the resource manager.

220 Furthermore, as already indicated in connection with feature 2.1, it is unclear whether and which connection properties are relevant for the command & control block. „Levy" does not disclose that the command & control block determines 80 the availability of the connection based on the communication channels with their desired connection properties. There is only the channel request command forwarded to the target port, which can accept or reject the establishment of the connection. As mentioned above, the channel type may play a role here, but it does not in itself represent a set of connection properties. It should also be noted that „Levy" states that "a channel request command is forwarded to the target port if an available channel to the named target port exists" (p. 19 l. 12-14). This indicates that the command & control block has already checked availability. It is unclear on what basis this was done. In any event, the predefined arbitration scheme in the route command and control block 80 does not teach nor suggest anywhere in "Levy" that arbitration for different communication channels

is performed based on any connection properties, in particular "Type", "NumPorts" or "TargetPorts".

221 Moreover, "Levy" does not describe that the resource manager informs the communication manager about the availability of the requested connection according to feature 5.2. It is only disclosed that the target node provides a connect response command back to the interface controller, which is then forwarded onto the source (p. 20 l. 16-19). Even though 'Levy' does not explicitly state this, it is implicitly revealed that the route command & control block 80 receives the message because it grants the ports access to the channels (p. 11 l. 12-15). However, it remains unclear whether this resource manager also reports the availability back to the communication manager, i.e. the route request block 82. This does not appear to be necessary.

222 The determination of the availability of a connection to a target port in the sense of a notification of the availability of the target port initiated by mere connection request, regardless of specific connection properties, does not suffice for the disclosure of features 4 to 5.

e) Feature 6

223 "Levy" describes that a connection is established. However, as with features 4 and 5, it remains unclear whether and to what extent this is based on the available connection properties. In this respect, the comments on features 4 and 5 apply mutatis mutandis.

3. „Rijpkema" (Exhibit BP-CR 3)

224 The scientific publication "A Router Architecture for Networks on Silicon", by Rijpkema et al., presented in "Proceedings of progress 2001, 2nd Workshop on Embedded Systems", submitted as Exhibit BP-CR 3 (hereinafter "Rijpkema"). "Rijpkema" was undisputedly published on October 2001 and is therefore prior art to the patent-in-suit. However, it does not disclose the technical teaching of patent claim 1.

225 "Rijpkema" outlines a router architecture designed for networks on silicon, which aims to address the increasing complexity of integrated systems by promoting the reuse of intellectual property (IP) blocks. The architecture becomes a composition of heterogeneous IP blocks interconnected by a network. This network is disclosed to support at least two traffic classes: guaranteed-throughput (GT) and best-effort (BE). Rijpkema proposes a router architecture that supports both the GT traffic and the BE traffic. According to Rijpkema, GT traffic is managed by using time-division multiplexing scheme to ensure predictable guaranteed throughput data transport, while BE traffic, which does not guarantee latency or throughput, uses packet-switching with input queuing and packet/flit scheduling.

a) Feature 2.1

226 "Rijpkema" does not disclose connections comprising a set of communication channels each having a set of connection properties, nor does it describe that the connection properties of the different channels are adjustable independently according to feature 2.1.

227 With regard to the alleged disclosure of feature 2.1, the Defendants refer to the concept explained in "Rijpkema" that two different traffic classes are supported by the network, namely guaranteed-throughput (GT) and best-effort (BE). As, according to Rijpkema, these two classes have different communication properties per definitionem, depending on the used service (BT or BE), the connection properties can be independently chosen. This is not convincing.

228 The Defendants do not cite any passage in "Rijpkema" that describes or refers to a connection with a set of communication channels, i.e. at least two channels. The Defendants' reference to different connection properties is not helpful in this regard because it does not provide any information about the number of communication channels in a connection. The plural form of "communication channels" in the abstract of "Rijpkema" is part of general statement that does not relate to connections and does not indicate whether a connection can have multiple channels.

229 Insofar as the Defendants refer to the statement in "Rijpkema" that "a *SetUp* packet is used to set up a *GT* connection from a source to a destination", which "can be sent by either the source or the destination of the *GT* packets" (p. 6, left col., second para.), this passage does only disclose how a connection can be established (by a *SetUp* packet) and what can initiate establishing a connection (the source or the destination), but not that the requested connection can comprise a set of communication channels. Nothing else can be inferred from the explanation in "Rijpkema" that the *SetUp* packet, if sent by the source, can be answered with a *AckSetUp* packet by the destination (p. 6, left col., second para.). Since these packets serve to establish the connection initially, they cannot have been sent via different communication channels of an existing connection. They are not even request and response packets of a transaction within the meaning of feature 2.2, since no connection supporting the transaction has been established yet.

230 Irrespective of this, "Rijpkema" does not disclose connection properties of different communication channels that can be adjusted independently. Rather "Rijpkema" implements the concept of supporting two traffic classes in the network by proposing a router that supports both time-division multiplexed streams of GT traffic and packet switching for BE traffic to allow high link utilisation. In this scheme, the unreserved GT and unused GT bandwidth is used for BE packets (p. 3, left. col., last para. to right col. first para.; see also p. 7, right col., last para. to p. 6, left. col., first para.). As connections are only set up in a circuit-switched network using a TDM scheme for GT traffic (see p. 3, left. col., third para), BE traffic is not offered for connections. Similarly, the general statement in "Rijpkema" that guaranteed throughput is characterised by low delay variation and a certain bandwidth (p. 1, right col., last para. and p.

2, right col., last para.) does not indicate that these properties can be adjusted independently for different channels.

b) Feature 4

231 It follows from the foregoing, that the GT connection request described in "Rijpkema", even when sent to a communication manager referred to in "Rijpkema" as admission control (see p. 2, right col. last para.), is not related to communication channels each having a specific set of connection properties within the meaning of feature 4 (see above). At least, it is not apparent that the *SetUp* packet is intended to establish a connection with communication channels each having a specific set of connection properties. Therefore, feature 4 is not disclosed in "Rijpkema".

c) Feature 5

232 For the reasons stated above related to feature 4, "Rijpkema" does also not disclose feature 5 of patent claim 1. Insofar, as "Rijpkema" states that admission control is done to decide whether or not the GT connection with the requested bandwidth is established (p. 3, right col., last para.), it is not revealed that the admission control or any other unit determines whether the requested connection based on the communication channels with specific connection properties is available. It can rather be assumed that the admission control merely checks whether there is a clash between a new GT connection and existing connections (see p. 4, right col. second para.) and then decides whether or not to establish the connection without taking specific connection properties into account.

d) Feature 6

233 Finally, „Rijpkema" does not disclose that a connection is established based on the available connection properties as requested according to feature 6. Reference is made to the preceding explanations related to features 3 to 5.

II. Inventive step

234 The invention under claim 1 of the patent-in-suit is not obvious to a person skilled in the art from the prior art.

1. Legal principles

235 Pursuant to Art. 56 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 is always a question of the individual case and requires examination considering all relevant facts and circumstances.

236 The approach taken by the Unified Patent Court when establishing inventive step is as follows:

237 It first has to be established what the object of the invention is, i.e. the objective problem. In order to avoid hindsight, the objective problem should not contain pointers to the claimed solution (Court of Appeal, Decision of 25 November 2025, UPC_CFI_528/2024 and UPC_CFI_529/2024 – Sanofi/Amgen)

238 This must be assessed from the perspective of the skilled person, with its common general knowledge, as at the application or priority date (also referred to as the relevant date) of the patent. This must be done by establishing what the invention adds to the state of the art, not by looking at the individual features of the claim, but by comparing the claim as a whole in context of the description and the drawings, thus also considering the inventive concept underlying the invention (the technical teaching), which must be based on the technical effect(s) that the skilled person on the basis of the patent understands is (are) achieved with the claimed invention (Court of Appeal, Decision of 25 November 2025, UPC_CFI_528/2024 and UPC_CFI_529/2024 – Sanofi/Amgen; Decision of 25 November, UPC_CFI_464/2024 and UPC_CFI_530/2024 – Meril/Edwards).

239 The claimed solution is obvious when at the relevant date the skilled person, starting from a realistic starting point in the state of the art in the relevant field of technology, wishing to solve the objective problem, *would* (and not only: *could*) have arrived at the claimed solution (Court of Appeal, Decision of 25 November 2025, UPC_CFI_528/2024 and UPC_CFI_529/2024 – Sanofi/Amgen; Decision of 25 November, UPC_CFI_464/2024 and UPC_CFI_530/2024 – Meril/Edwards).

240 The relevant field of technology is the field relevant to the objective problem to be solved as well as any field in which the same or similar problem arises and of which the person skilled in the art of the specific field must be expected to be aware (Court of Appeal, Decision of 25 November 2025, UPC_CFI_528/2024 and UPC_CFI_529/2024 – Sanofi/Amgen; Decision of 25 November, UPC_CFI_464/2024 and UPC_CFI_530/2024 – Meril/Edwards).

241 A starting point is realistic if the teaching thereof would have been of interest to a skilled person who, at the relevant date, wishes to solve the objective problem. This may for instance be the case if the relevant piece of prior art already discloses several features similar to those relevant to the invention as claimed and/or addresses the same or a similar underlying problem as that of the claimed invention. There can be more than one realistic starting point and the claimed invention must be inventive starting from each of them (Court of Appeal, Decision of 25 November 2025, UPC_CoA_528/2024 and UPC_CoA_529/2024 – Sanofi/Amgen; Decision of 25 November, UPC_CFI_464/2024 and UPC_CFI_530/2024 – Meril/Edwards; Order of 26 February 2024, UPC-CoA_335/2023; CD Munich, Decision of 16 July 2024, UPC_CFI_1/2023; Decision of 17 October 2024, UPC_CFI_252/2023; CD Paris, Decision of 26 December 2024, UPC_CFI_338/2023 and UPC_CFI_410/2023; LD Düsseldorf, Decision of 10 April 2025, UPC_CFI_50/2024; LD Hamburg, UPC_CFI_173/2024 and 424/2024, Decision of 10 July 2025). There may be several realistic starting points. It is

not necessary to determine the 'most promising' starting point (CD Munich, Decision of 16 July 2024, UPC_CFI_1/2023; CD Munich, Decision of 17 October 2024, UPC_CFI_252/2023; CD Paris, Decision of 5 November 2024, UPC_CFI_315/2024; CD Paris, Decision of 26 December 2024, UPC_CFI_338/2023 UPC_CFI_410/2023 LD Mannheim, UPC_CFI_340/2023, 31 January 2025 - XX; LD Munich (Panel 2), UPC_CFI_248/2024, 22. August 2025 – Brita/Aquashield).

242 The skilled person has no inventive skills and no imagination and requires a pointer or motivation that, starting from a realistic starting point, directs it to implement a next step in the direction of the claimed invention. As a general rule, a claimed solution must be considered not inventive / obvious when the skilled person would take the next step prompted by the pointer or as a matter of routine and arrive at the claimed invention (Court of Appeal, Decision of 25 November 2025, UPC_CFI_528/2024 and UPC_CFI_529/2024 – Sanofi/Amgen; Decision of 25 November, UPC_CFI_464/2024 and UPC_CFI_530/2024 – Meril/Edwards; Order of 26 February 2024, UPC_CoA_335/2023; CD Munich, Decision of 16 July 2024, UPC_CFI_1/2023; Decision of 17 October 2024, UPC_CFI_252/2023; LD Düsseldorf, Decision of 10 October 2024, UPC_CFI_363/2023; Decision of 10 April 2025, UPC_CFI_50/2024; LD Mannheim, Decision of 2 April 2025, UPC_CFI_365/2023).

243 A claimed solution is obvious if the skilled person would have taken the next step in expectation of finding an envisaged solution of his technical problem (Court of Appeal, Decision of 25 November 2025, UPC_CFI_528/2024 and UPC_CFI_529/2024 – Sanofi/Amgen).

244 The burden and presentation of proof with regard to the facts from which the lack of validity of the patent is derived and other circumstances favourable to the invalidity or revocation lies with the claimant in a revocation action. Therefore, the burden of proof that the results were clearly predictable or the skilled person would have reasonably expected success, i.e. that the solution he envisages by taking the next step would solve the objective problem, lies as well on the party asserting invalidity of the patent. Even though proof of certain facts, if contested, may be required, the assessment of whether the legal consequence for which the facts and circumstances have been submitted is justified, is a question of law (Court of Appeal, Decision of 25 November 2025, UPC_CFI_528/2024 and UPC_CFI_529/2024 – Sanofi/Amgen; Decision of 25 November, UPC_CFI_464/2024 and UPC_CFI_530/2024 – Meril/Edwards).

2. Technical problem

245 The technical problem underlying the patent-in-suit is that a NoC as a distributed interconnect has drawbacks or, at any rate, different requirements with regard to data ordering, arbitration, latency or buffering and flow control compared to a direct interconnect such as a bus (see for example para. [0021], [0024], [0032]). The patent-in-suit therefore has the objective of enabling more effective use of the network's properties..

3. Combination of "Goossens", "Levy" or "Rijpkema" with "Drake" (Exhibit BP-CR 4)

246 The invention of the patent-in-suit is not rendered obvious by a combination of "Goossens" or "Rijpkema" with the patent US 5,461,611 published on 24th October 1995 and, therefore, prior art to the patent-in-suit, submitted as Exhibit BP-CR 4 (hereinafter: "Drake")

a) Realistic starting point

247 "Goossens" and "Rijpkema" are realistic starting points for the examination of inventive step. The Defendants named also "Levy". However, "Levy" cannot considered a realistic starting point, as it does not even refer to a NoC. In this regard, the teaching of "Levy" would not have been of interest to a skilled person who, at the relevant date, wishes to solve the objective problem. The Claimant wishes to limit the realistic starting point to "Rijpkema". However, it follows the problem-solution approach, whereas the UPC pursues its own approach to examining inventive step. Accordingly, there can be more than one realistic starting point, and in addition to "Rijpkema", "Goossens" also meets the requirements for a realistic starting point. "Goossens" and "Rijpkema" pursue a similar concept with "Rijpkema" already presenting concrete solutions, while "Goossens" is still more conceptual, leaving leeway for additional considerations that do not appear to exclude the teaching of the patent from the outset.

b) Combination of "Goossens" with "Drake"

248 "Goossens" presents a concept for a SoS with re-used or bought IP cores and a NOS as a hardware architecture to implement communication between the IP cores, and as software model in the form of a protocol stack to structure the programming of the NOS. This concept may serve as the basis and, in this respect, the starting point for arriving at the technical teaching of the patent at issue. However, "Gossens" does not disclose all details of a connection within the meaning of the patent-in-suit (feature 2.1: independently adjustable connection properties of different communication channels; feature 2.2: support of transactions with request- and response-messages), the role and the interplay of communication and resource managing means for the establishment of a connection (features 3 to 6).

249 In seeking to implement the NoC concept of "Goossens", the skilled person would refer to the state of the art for the design of communication and resource management. In this respect, it cannot be ruled out that s/he would also consider the techniques developed for wide area networks, since the skilled person also has knowledge in this technical field (see above) and the patent specification itself states that many solutions for networks in other areas (local and wide area networks) are also applicable to networks on chip (para. [0005]).

250 However, the skilled person has no reason to seek further flexibility in the connection configuration. There is no indication in „Goossens" to take a closer look at the connections with their simplex/duplex channels and to further develop and differentiate them. The technical

problem addressed by "Goossens" lies less in the connections (which were basically known) than in the interaction of IPs and the NOS and the design and programming of the NOS. According to this, there is no pointer or any other incentive in "Goossens" for the skilled person to look at prior art with regard to feature 2.1 and 2.2.

251 Furthermore, the skilled person would not combine "Goossens" with "Drake".

252 "Drake" relates to a quality of service (QoS) management system for local area networks, which ensures selected levels of quality of service to transmission requests submitted to the management systems. It receives requests for "QoS connections" with specified properties, determines whether the required network resources are available, and reserves those resources for the requesting station. Otherwise, the request is denied (see the abstract of "Drake").

253 A combination of "Goossens" and "Drake" is not simply excluded since "Drake" relates to LAN networks. However, the skilled person would not have combined "Goossens" with "Drake" because they pursue different concepts beyond that. It is already questionable whether "Drake" discloses a communication manager within the meaning of feature 1.3 of the patent claim, i.e. a hardware/software component managing the communication between the stations of the LAN in "Drake". The Defendants consider QoS requestor manager 12 in "Drake" to be a communication manager. However, its primary role is to manage quality of service requests, rather than managing communication between different modules (see col. 4, l. 29-34 and l. 59-64 of BP-CR 4). If the source station 10 in figure 1 of "Drake" was considered a module as the Defendants do, the location of the alleged communication manager (QoS requestor manager 12) in source station 10, separate from the resource manager (QoS allocator), would correspond to placing the communication manager in one of the modules on the NoC. This, however, contradicts the approach in "Goossens" which suggests to use re-use or bought IP blocks as modules and focusses on programming and configuring the NOS. In particular, computation is to be mapped to functional IPs and communication to the NOS (p. 2, right col., l. 35-37 of "Goossens") which therefore comprises the relevant managing functions (see p. 2, right col., l. 12-16 and p. 3, right col., l. 30-32 of "Goossens"). This excludes the placement of a communication manager in the module for managing network communication. The Claimant rightly points out that adapting a quality of service manager in NoC context disclosed in "Goossens" using the information of LAN level QoS allocator in "Drake" would require not just parameter tuning but architectural reengineering, since the topology of the network with stations (10, 20, 29) and the network interface components (16, 21, 28) in "Drake" do not correspond to the topology of NOS from "Goossens".

254 Finally, even if the skilled person combined "Goossens" and "Drake", s/he could not arrive at the technical teaching of patent claim 1. As the Claimant pointed out during the oral hearing, "Drake" does not disclose the establishment of connections comprising a set of communication channels each having a set of connection properties which are adjustable independently (feature 2.1). According to "Drake" the application 11 in source station 10 requests a QoS connection for a multimedia data stream to target station 29. This request is assembled by the

QoS requestor manager 12 and a QoS protocol machine 13 in source station 10 (col. 4, l. 26-36 of "Drake"). The connection request is received by the QoS allocator 20 which examines the resources of LAN 17 and determines if a path exists in LAN 17 between station 10 and station 29 which satisfies the requested level of QoS. If the QoS exists, it is assigned to this QoS data stream (col. 4, l. 49-54 of "Drake"). An allocation acceptance message is then sent to the source 10 of the multimedia file and the multimedia file is transmitted to the target station 29 (col. 11, l. 22-29 and fig. 5 of "Drake"). It can remain open whether a connection is established by determining an existing path and assigning QoS to a data stream, especially since the source station 10 and the target station 29 have already communicated before the QoS connection is established (see figure 4 of "Drake"). In any case, it is not disclosed either explicitly or implicitly that this QoS connection comprises a set of communication channels each having a set of connection properties that can be adjusted independently. The connection is only used to transmit the multimedia file. Therefore, feature 2.2 and the support of transactions by the QoS connection is also not disclosed.

255 Since "Goossens" does not disclose features 2.1 (second part) and 2.2, the skilled person cannot arrive at the invention according to the patent-in-suit by combining "Goossens" and "Drake".

c) Combination of „Rijpkema" with "Drake"

For the combination of "Rijpkema" and "Drake", the same applies as stated for "Goossens" and "Drake". The disclosure content of "Rijpkema" does not fundamentally differ from that of "Goossens".

4. Combination „Goossens 2" (Exhibit BP-CR 8) with „Drake"

256 The technical teaching of patent claim 1 is not obvious to the skilled person from a combination of the article "Guaranteeing the Quality of Services in Networks on Chip" from Goossens, published on January 31, 2003, as part of the book "Networks on Chip", by A. Jantsch and H. Tenhunen (submitted as Exhibit BP-CR 8; hereinafter: "Goossens 2") with "Drake".

257 It can be left open whether the priority of the patent-in-suit is effectively claimed. Even if this is not the case and "Goossens 2" is prior art within the meaning of Art. 54 (2) EPC, the technical teaching is not rendered obvious from a combination of "Goossens 2" and "Drake".

258 It is undisputed that "Gossens 2" does not disclose communication managing means or resource managing means and therefore not the related features 1.3, 1.4, 3, 4, 5.2. For the reasons stated above with regard to the combination of "Goossens" with "Drake", the skilled person would not take the next step and arrive at the claimed solution as he would not find it straightforward to integrate the arrangement of "Drake" in "Goossens 2".

5. Combination „Rijpkema 2" (Exhibit BP-CR 9) with „Drake"

259 Regardless the question whether the priority of the patent-in-suit is validly claimed and the article "Trade-offs in the design of a router with both guaranteed and best-effort services for networks on chip" from Rijpkema et al., published in IEE Sept. 2003, doi: 10.1049/ip-cdt:20030830, submitted as Exhibit BP-CR 9 (hereinafter: "Rijpkema 2"), is prior art with regard to the patent-in-suit, the claimed technical teaching is not rendered obvious by a combination of "Rijpkema 2" and "Drake".

260 It is undisputed that "Rijpkema 2" does not disclose communication managing means or resource managing means and therefore not the related features 1.3, 1.4, 3, 4, 5.2. Moreover, "Rijpkema 2" does not describe that a connection comprises a set of communication channels each having a set of connection properties which can be adjusted independently (feature 2.1). The Defendants do not cite any passage in "Rijpkema 2" in which feature 2.1 could be explicitly or at least implicitly disclosed and "Rijpkema 2" does not in fact contain any such passage. Therefore, for the reasons stated above for the combination of "Goossens" and "Drake", the skilled person would not combine "Drake" with "Rijpkema 2".

III. Auxiliary requests

261 Since the patent-in-suit is valid as granted, the auxiliary requests are no longer relevant.

IV. Application for stay of proceedings

262 The Defendants' request for a stay of proceedings with regard to the Decision of the Federal Patent Court to revoke the German part of the patent-in-suit is unsuccessful.

263 Pursuant to Rule 295 (a) RoP, the court may stay proceedings where it is seized of an action relating to a patent which is also the subject of opposition proceedings or limitation proceedings before a national authority where a decision in such proceedings may be expected to be given rapidly. However, this does not mean that the Court will stay proceedings in every case where national opposition or nullity proceedings are pending and a Decision is expected shortly. Rather, the court has discretion and must take into account all the circumstances of the individual case.

264 In the case at hand, it must be taken into account, that the national Federal Patent Court has already made a decision. But, as far as can be seen, this decision is not yet final, and it is not foreseeable whether and when this will be the case. The fact that the Federal Patent Court has revoked the German part of the patent-in-suit does not necessitate a stay of proceedings either. This decision of the Federal Patent Court is not prejudicial, as the Unified Patent Court itself has the competence to decide on the validity of a patent and, in the present case, is convinced of the validity of the patent-in-suit for the reasons stated above. As long as the

German part of the patent-in-suit has not been revoked by a final decision, the Unified Patent Court is free, within the limits of its discretion, to continue the proceedings.

265 In this context, it should also be noted that a stay of proceedings would mean that the Claimant would have to wait even longer for a decision on his claims for patent infringement, even though the court is convinced of the validity of the patent. This is particularly unreasonable for the French part of the patent, because it is also the subject of the proceedings but is not affected by the Federal Patent Court's revocation decision.

C   Infringement action

266 The Infringement action is not successful on the merits.

I.   Attacked embodiment

267 All Qualcomm NoC ICs having NoC interconnects that the Claimant alleges to be Arteris NoC, i.e. that contain a NoC designed using tools of the company Arteris Inc. and/or derivatives thereof, are the attacked embodiment (hereinafter: the attacked embodiment).

1.   Legal principles

268 It is the Claimant who determines in the Statement of Claim which situation and circumstances the Court is to decide on in terms of location, time and substance. The underlying facts form the basis for the Court's decision and at the same time limit the court's competence to decide. In the event of a patent infringement action, the facts which are particularly relevant are those that allegedly constitute patent infringement within the meaning of Art. 25 ff. UPCA and fulfil the requirements for Court measures pursuant to Art. 56 ff. UPCA. Of particular importance in this context, beside the infringing act, is the design of a product or process as alleged by the Claimant, which, according to the Claimant's submission, is said to comprise all the features of the asserted patent claim. This essentially represents the "attacked embodiment." Accordingly, the "attacked embodiment" is regularly determined by the factual design of a certain product or a process with regard to the features of the invoked patent claim as asserted in the Statement of Claim. This can be a specific product specified, for example, by its product name, product sheet and technical design. However, the attacked embodiment may also comprise all products that generally have the technical features specified by the Claimant, which allegedly realise the technical teaching of the patent claim. This may also include products unknown to the Claimant or, in the case of an injunction, future products insofar as they essentially correspond to the features of the product presented by the Claimant in his Statement of Claim, which he considers decisive for the patent infringement. In such a case, it is usually sufficient if the Claimant has exemplified the infringement on a sample of the attacked embodiment. What is ultimately meant by the attacked embodiment depends on the interpretation of the Claimant's submission. Once this has been defined it is for the Court to decide whether this attacked embodiment realises the teaching of the patent claim.

2. <u>Case at hand</u>

269 In the present case, the attacked embodiment is not only limited to the specific processor Snapdragon 8+ Gen. 1 but comprises all Qualcomm NoC ICs having NoC interconnects that the Claimant alleges to be Arteris NoC, i.e. include a NoC designed using tools of the company Arteris Inc. and/or derivatives thereof. The Claimant clearly states in its Statement of Claim that it is attacking products

> "that include ICs that incorporate, implement, utilize, include, or otherwise comprise NoCs designed using tools from the company Arteris Inc. ('Arteris NoC') or NoCs which are materially similar (core-identical) to such Arteris NoCs. These products are patent infringing 'infringing embodiments'." (p. 39 of the Statement of Claim)

On the preceding pages of the Statement of Claim, the Claimant has explained what it means by "NoCs designed using tools from the company Arteris Inc." According to this, all attacked embodiments (in the Claimant's own words: "infringing embodiments") comprise integrated circuits (ICs) of the Defendants, having network on chip (NoC) interconnects (these are the "Qualcomm NoC ICs"). These ICs include SoCs, such as the Snapdragon 8+ Gen. 1. The Qualcomm NoC ICs comprise a network as on-chip interconnect. More particularly, the network concerns a network on chip (NoC). These NoCs include (but are not limited to) a NoC designed using tools of the company Arteris and/or derivatives thereof (these are the "Arteris NoC"). For the meaning of "Arteris NoC", the Claimant refers to Arteris NoC Chapter submitted as Exhibit P 11. Consequently, the attacked embodiment covers all products that feature NoC which, according to the Claimant's submission, are designed in accordance with the Arteris NoC Chapter. In this context, the mention of the Snapdragon 8+ Gen. 1 has only been made by way of example.

270 This is also clear from the fact, that, with regard to the list of specific processors and other products provided in the Statement of Claim (see p. 43 ff. of the Statement of Claim), the Claimant refers to "non-limiting examples of infringing embodiments" (p. 43 of the Statement of Claim). This shows that the attacked embodiment is not limited to the Snapdragon 8+ Gen. 1 or products expressly listed in the Statement of Claim but comprises all products in the meaning of the general definition put forward by the Claimant. The Snapdragon 8+ Gen. 1 is only the model that exemplifies the attacked embodiment and on the basis of which the Claimant attempts to demonstrate infringement of the patent-in-suit.

271 It follows from this, that the attacked embodiment in any case covers all of the Defendants' products listed in the Statement of Claim, but is not limited to them. The single exception is the processor MSM6000, which the Defendants contest as falling within the Claimant's definition of the attacked embodiment as it uses a different technology than the processor Snapdragon 8+ Gen. 1 and does not even have a NoC. The Defendants have not disputed that other processors fall within the scope of the definition of the attacked embodiment. In this

respect, the Claimant's simple assertion that all the other listed models are corresponding processors is sufficient. It would have been incumbent on the Defendants to dispute this for certain models on the list. This is reasonable for them because they know their own products best. Instead, however, they have merely made unsubstantiated claims that there were other models on the list which were already publicly available before the priority date of the patent-in-suit without using any NoC technology. This is not sufficient to dispute the Claimants' assertion.

272 The Samsung Galaxy smartphones, chromebooks, laptops and tablets, which the Claimant refers to as "infringing embodiments IV" by the Claimant, do not constitute a further attacked embodiment. Since they contain processors that constitute the attacked embodiment they do not differ from the attacked embodiment in technical terms or in terms of the features relevant to the realisation of claim 1 of the patent-in-suit. Rather, the arrangement of these processors in electronic devices and the offering and distributing of these devices by companies other than the Defendants raises questions with regard to the infringing acts and the perpetration and participation in such acts.

II.   Realisation of claim features

273 It cannot be established that the attacked embodiment makes use of the technical teaching of claim 1 of the patent in suit.

274 The Claimant asserts that the attacked embodiment comprises NoC designed using tools developed by Arteris and described in the Arteris NoC Chapter (Exhibit P 11), in particular using the Danube IP library. The Defendants have contested the use of Arteris NoC and tools described in the Arteris NoC Chapter. However, the Claimant's submission based on the Arteris NOC Chapter is already inconclusive. In addition, the realisation of the technical teaching of the patent-in-suit cannot be established based on the Defendants' submission regarding the functioning of the attacked embodiment.

1.   Assessment based on Arteris NoC

275 It is not apparent, nor has it been argued, that Arteris technology, in particular the Arteris NOC Chapter, as presented by the Claimant, necessarily requires the use of the technical teaching of the patent-in-suit, as resulting from a correct interpretation of patent claim 1. The Claimant's submissions are inconclusive in this regard.

276 According to the Arteris NoC Chapter, the NTTP protocol is used in Arteris NoC, which adopts a three-layer approach with transactions including request packets and/or response packets (p. 311 f. of Exhibit P 11). However, Arteris NoC technology does not require that, in accordance with feature 3, a connection with connection properties be requested, the availability of which is determined by a resource manager and communicated to a communication manager in accordance with feature group 5, and which is established based

on the available connection properties in accordance with feature 6. As a result, there is no connection within the meaning of the patent-in-suit and as required in patent claim 1.

a) <u>Feature 3</u>

277 Arteris technology and in particular the Arteris NoC Chapter does not require that a first module issues a request for a connection with a second module to a communication manager.

278 The master module of an Arteris NoC can be regarded as first module, the addressed target module as a second module. However, the master module does not issue a request within the meaning of patent claim 1. Rather, it sends request packets which are part of the transaction itself.

279 The Claimant therefore argues that the patent-in-suit does not follow a two-step process whereby an initial connection request must first be sent followed by a separate and independent transaction message. Instead, the NTTP protocol allows the request packet to initiate the transaction by simultaneously embedding bits, in particular a "Prs" and a "Tag" signal, in the NTTP request/response packet structure in order to guarantee Quality of Service (QoS).

280 Even though the technical teaching of patent claim 1 does not appear to exclude sending the transaction request together with the connection request to the communication manager, the message can only be transferred via the network to the target module after the connection has been established. The connection request must lead to the establishment of a connection so that the message can then be transferred. In particular, a connection request initiates the procedure according to features 4 to 6. However, it is not apparent that an Arteris NoC is capable of performing the steps described in features 4 to 6 and that a connection is established before the message is transferred.

(1)

281 With regard to the "Prs" signal, the Claimant argues that the request from the master module, i.e. the request packet including the "Prs" signal, arrives at the input port of a switch (router) in the Arteris NoC. The Claimant considers the switch or a circuitry within it to be a communication manager. The input controller of the switch (router) extracts data from the incoming packets, including the "Prs" signal, and sends it to the arbiter within the switch, which the Claimant considers to be a resource manager. Since more than a single input port can request a given output port, the arbiter selects one input with the greatest pressure among the request packets at the input ports based on the "Prs" signal and informs the input controller, which transmits the rest of the packet to the crossbar and then eventually to the selected output port of the switch. The router architecture for packet transportation in an Arteris NoC is depicted below (figure 11.6 of the Arteris NoC Chapter, Exhibit P 11).

Router Architecture
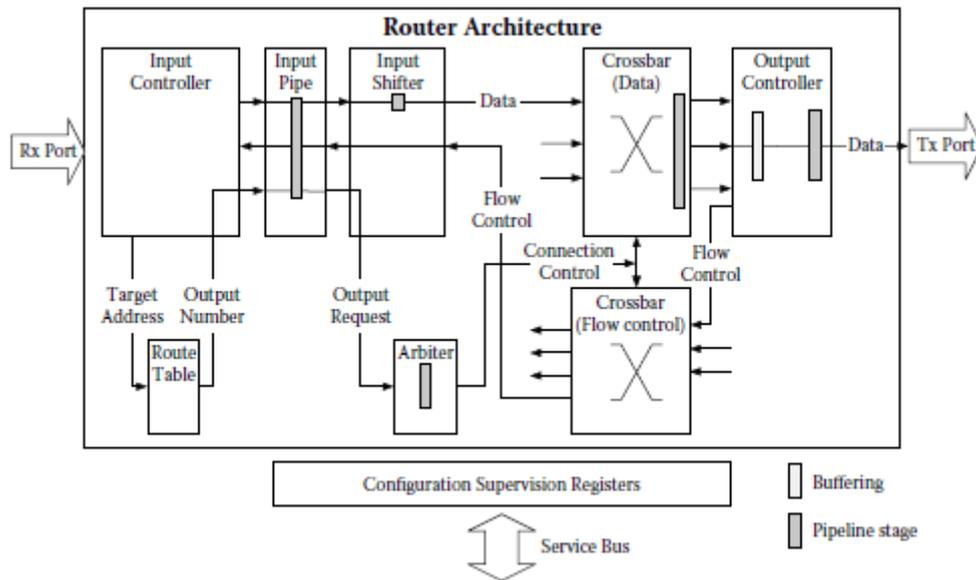
282 However, arbitration according to the Arteris NoC Chapter is performed in the switches (routers), i.e. in the network nodes. It follows that the outgoing message has already entered the network space and is routed before a connection has been established. In fact, arbitration for the same message takes place in each network node again based on the "Prs" signal. This already excludes a request that aims to establish a connection with specific properties for the entire route between the first module and the second module. In each switch (router) the arbiter only decides in relation to the other requests queued at the input ports of the corresponding switch. A connection with specific connection properties for the entire route between the first module and the second module is not intended. Nor is the availability of such properties for such a connection determined, and no connection is established. The arbiter's decision only affects the behavior of the respective router and has no influence on the further routing path of the outgoing message, in particular on other network nodes.

283 Moreover, the "Prs" signal only refers to the packets of the outgoing message. All packets belonging to this message are forwarded to the selected output until a packet tail is detected which causes the output currently allocated to that input to be released and become re-electable (see p. 321 of Exhibit P 11). It is not apparent, nor has it been stated, that the "Prs" signal or the arbitration decision has any effect on the communication channel for a return message within the same transaction or on any arbitration decision with respect to those messages. Since a connection supports transactions that comprise outgoing messages and/or return messages, a connection request must result in the establishment of a connection, i.e. the allocation of network resources, covering the communication channels both for outgoing messages and return messages, if any. However, in an Arteris NoC the slave NIU sets the "Prs" signal itself. There is no establishment for a connection including a set of communication channels for the entire transaction. If the "Prs" signal in a return message is always identical to that in the outgoing message, the connection properties of the various communication channels of the alleged connection are not adjustable independently. As a result, the Claimant

70

cannot explain without contradiction how the 'Prs' signal could be qualified as a connection request within the meaning of patent claim 1.

284 Instead, an Arteris NoC as described in the Arteris NoC Chapter performs arbitration as was known from the prior art. The patent specification states the following in its explanations on prior art:

> "In a NoC arbitration is also necessary, as it is a shared interconnect. However, in contrast to buses, the arbitration is distributed, because it is performed in every router, and is based only on local information. Arbitration of the communication resources (links, buffers) is performed incrementally as the request or response advances." (para. [0024])

This is precisely what is described in the Arteris NoC chapter. Arbitration according to the Arteris NoC chapter is performed by the arbitrator in each switch (router) and is based on local information, i.e. related to the requests queued at the switch's input ports. It is performed incrementally, as each switch along the route arbitrates again. However, the quoted section does not refer to a connection within the meaning of patent claim 1, which could be required for arbitration. On the contrary, this distributed approach contradicts the technical teaching of patent claim 1, which, analogous to buses, requires the temporary establishment of connections with fixed assignment of connection properties for the entire transaction. This does not happen in an Arteris NoC.

285 The statements on the Arteris Webpage, submitted as Exhibit P 14, do not justify any other assessment. Rather, these statements confirm the above findings. Where it is stated that "the interconnect assigns priorities to transactions" (p. 2 of Exhibit P 14), it is further explained that "priority levels can be attached to individual packets or to all transactions pending on a socket" (p. 2 of Exhibit P 14). It is neither apparent nor argued by the Claimant, that this statement describes anything other than the "Prs" signal and its functionality according to the Arteris NoC Chapter. However, as already explained, the "Prs" signal cannot be regarded as a connection request. Insofar as the Claimant refers to traffic classes, it is unclear whether and how these are requested, determined and established, unless it is the "Prs" signal, which, however, cannot be regarded as a connection request.

(2)

286 For the reasons stated above, the "Tag" signal also cannot be regarded as a connection request according to feature 3. It is neither apparent nor explained by the Claimant how this signal is exploited in any communication manager or resource manager. Even if it is assumed that a router or switch comprises such a manager, there is no indication of the effects of the "Tag" signal, other than that it enables ordering. In particular, according to the Arteris NoC Chapter, "no reordering occurs in the switch. The incoming packets through input port A and the outgoing packets through output port B are guaranteed to be delivered on B in the order in which they arrive on A" (p. 321 of Exhibit P 11). Against this background, the "Tag" signal appears to be directed solely at the NIU of the addressed module to enable ordering, but not

to establish a connection. Rather, the message is already transmitted before the "Tag" signal takes effect. In this respect, it is doubtful whether the "Tag" signal can be regarded as a connection property at all.

(3)

287 Insofar as the Claimant refers to the "RxRdy" signal (see p. 74 of the Statement of Claim), this signal can neither be regarded as a connection request as it is only sent from the slave module, i.e. the second module, which does not request a connection according to feature 3. The Claimant was right not to comment further on this signal.

(4)

288 In its Statement of Claim, the Claimant still refers to other mechanisms that allow to independently adjust the alleged connection properties, for example bandwidth limiters, rate regulators and other software programmable traffic control mechanisms (page 81 f. of Exhibit P 10). However, it is not argued that these properties are requested and assigned in connection with a specific connection request from the first module. Instead, the Arteris webpage submitted by the Claimant shows that QoS information may be generated from within the NoC interconnect using Arteris' QoS Generator. It is an internal network mechanism that, regardless of a specific connection or connection request, causes a NIU to stop accepting further requests or to demote transactions. Insofar as the Claimant refers to the Arteris Springer Publication (Exhibit P 15), it even follows from this that rate adaptation can already be carried out during the design process by inserting buffering (p. 16 of Exhibit P 15).

b) Features 1.3, 1.4, 4 and 5

289 It follows from the explanations in the context of feature 3 and the connection request that it cannot be inferred from the Arteris NoC Chapter that the attacked embodiment comprises a communication manager or a resource manager within the meaning of patent claim 1.

290 In the absence of a connection request, there can be no communication manager to forward such a request according to feature 4. In particular, there is no resource manager within the meaning of feature group 5.

(1)

291 With regard to arbitration and the evaluation of the "Prs" signal, the Claimant refers to the switch (or a circuitry within it) as a communication manager and to the arbiter as a resource manager. However, the arbiter does not determine whether a requested connection with certain properties is available, but only decides which of several packets at the input is assigned to an output first. As already explained, this is a relative decision that only affects the switch and the packets present there, and which is used to forward a message. The arbiter does not determine the availability of connection properties for a connection from the first to the second router across the entire network including communication channels for outgoing messages and return messages, nor does it communicate this information.

(2)

292 The same applies to the NIUs or circuits contained therein, which the Claimant regards as both communication managers and resource managers if a "Tag" field is evaluated. The NIU concludes from the transaction message itself and the "Tag" signal contained therein that ordering should be enabled. However, the transaction message has already been sent, so establishing a connection – at least for the outgoing message – is not necessary. Furthermore, neither the availability of connection properties is determined nor is a connection established within the meaning of the patent in suit. Against this background, the NIU (or a circuit therein) cannot be qualified as both a communication manager and a resource manager.

(3)

293 Finally, the Claimant refers to the NIUs as communication manager and to the bandwidth limiters and rate regulators as resource managers which, according to the Claimant, cause the master NIU to stop accepting requests or to demote transactions when they receive request packets including corresponding QoS prioritisation data from the master NIU (p. 92 and 94 of the Statement of Claim). However, there are already serious doubts that the NIU sends request packets with prioritisation data to the bandwidth limiter or the rate adapter. The Claimant does not substantiate this assertion. Nor does it specify the prioritisation data. Above all, however, the Arteris Webpage refers to the QoS generator (and not to the NIU), which instantiates software-programmable means when certain bandwidth or throughput thresholds are exceeded, including the bandwidth limiter and the rate regulator (p. 2 f. of Exhibit P 14). It therefore seems more likely that the QoS generator monitors the data traffic in the network and, as also described on the Arteris Webpage, itself generates QoS information that leads to the instantiation of the bandwidth limiter or the rate adapter. Thus, even if this information is generated based on the evaluation of the pressure signal information contained in the messages, there is no request for a specific connection from a first module, and, in any event, there is also no indication that the bandwidth limitation or rate regulation is set up only in relation to a specific connection. In particular, it cannot be regarded as establishing a connection if the throughput or bandwidth threshold is not exceeded and a bandwidth limiter or a rate regulator is not instantiated (as stated by the Claimant on p. 96 of the Statement of Claim). Rather, there is no notification of the availability of a connection within the meaning of feature 5.2, and mere inaction does not constitute the establishment of a connection.

c) Feature 6

294 It follows from the above and has already been mentioned that it cannot be inferred from the Claimant's submission, nor is it otherwise apparent, that an Arteris NoC, as described in the Arteris NoC Chapter, is suitable for establishing a connection within the meaning of feature 6 of the patent-in-suit. The Arteris NoC Chapter does not indicate that connections within the meaning of the patent-in-suit exist at all. Rather, it appears that the Arteris technology takes a different approach to that of the patent-in-suit, but in any case does not necessarily require the use of the claimed technical teaching with the request, determination, notification and establishment of a connection in accordance with features 2 to 6.

295 As explained in the context of claim construction, a connection according to patent claim 1 can be described as a certain temporary state of the network characterised by the guaranteed allocation of specific network resources for the transmission of data and messages between two modules whereby the establishment (and consequently closing) of connections takes place in a dedicated process that requires a connection request and involves a communication manager and, in particular, a resource manager as an independent functional unit that determines and communicates the availability of the network resources for the requested connection including the communication channels for outgoing messages and for return messages if the latter is needed. In particular, establishing a connection means that, initiated by the resource manager, routers, switches and interfaces along the route are configured accordingly to provide the requested connection properties.

296 Such a connection is not required by the Arteris NoC Chapter and, to the extent presented, the Arteris technology. As explained, there is no request for such a connection, no communication managers and resource managers to determine and communicate the availability of such a connection, which is also not established. It is not apparent that an Arteris NoC can temporarily be brought into a state in which network resources are allocated for a specific transaction, including outgoing and incoming messages..

297 Even though the Claimant emphasises in its Reply that the QoS mechanisms point to a connection-oriented approach because they provide guarantees such as bandwidth, throughput, best effort and/or end-to-end communication latency, this is not sufficient. The keyword "connection-oriented" does not replace explanations on why and how all features of the patent claim are realised. This is lacking here. Instead, the Claimant takes a fragmented view and considers each feature in isolation. In fact, it only shows for the „Prs" signal and, under certain circumstances, for the "Tag" signal how this is transmitted and evaluated and what effects it has with regard to all claim features. However, the aforementioned signals cannot be regarded as connection requests according to feature 3, and their evaluation does not lead to the establishment of a connection within the meaning of the patent-in-suit. Accordingly, there is also a lack of corresponding communication and resource managers in the sense of patent claim 1.

298 The Claimant's statements during the oral hearing, in which it expanded on his written submissions and explained, on the basis of the Arteris NoC chapter, the function of the "prs" signal and its effects on packet switching and quality of service, do not justify any other conclusion. Especially, no connection is established when the crossbar switches the packets from the input to the required output. This process is limited to the switch containing the crossbar and is the result of the arbitration and routing decision. However, a connection from the first module to the second module with a set of communication channels having a set of connection properties is not established. Accordingly, there is also no connection request and no communication and resource managing means to process this request in accordance with the technical teaching of patent claim 1. Reference can be made to the preceding explanations on the "prs" signal.

2. Assessment based on Defendants' submissions

299 An infringement of the patent-in-suit can also be ruled out if one follows the Defendants' argument that the attacked embodiment does not use the technology according to Arteris NoC Chapter.

300 The Defendants have expressly disputed that the attacked embodiment was designed identical to Arteris NoCs described in the Arteris NoC Chapter; the Arteris NoC Chapter does not describe NoCs on Qualcomm chips. Above all, the Defendants have stated and confirmed in a written witness statement of ███████████, former Arteris employee and with Qualcomm since 2013, now responsible for the team that manages the technology used for designing NoC, that Qualcomm's design tool does not comprise the Danube NoC IP block library, i.e. the basis for the Arteris solution for SoC communication architecture (p. 311 of the Exhibit P 11), and that he is not aware of any Qualcomm chips comprising the Danube NoC IP block library (Exhibit BP 3).

301 According to the Defendants' explanations, ████████████████████████
███
███
███
███
███
███
███
███
███
███
██.

302 Based on this submission of the Defendants with regard to the design and functioning of the attacked embodiment, the use of the teaching of the patent in suit cannot be assumed nor can it be assumed based on the submissions.

303 The Defendants dispute that the attacked embodiment, as actually designed and functioning according to their submission, utilises the technical teaching of the patent-in-suit. The Defendants assert that the attacked embodiment does not use connections within the meaning of the patent-in-suit. ████████████████████████████████
███
███
███
███
████████████████████████████. According to the Defendants, ████████████

██

██

██. Based on the
Defendants' submissions, the realisation of the features 2 to 6 must be denied. Even if ██████
██████████████████ should not in itself preclude the implementation of a connection-based
approach in accordance with patent claim 1, the Defendants dispute the use of such
connections within the meaning of the patent-in-suit.

304 The Claimant, on the other hand, has not sufficiently substantiated its argument regarding
patent infringement with regard to the actual functioning of the attacked embodiment. Even
though it refers to individual drivers of the Linux kernel that can be used in individual models
of the attacked embodiment, the Claimant's submissions are inconclusive so that an
infringement of the patent-in-suit cannot be assumed.

305 The Claimant identifies various functions and structures in the Linux source code drivers that
manage QoS. In particular, it refers to the QoS parameters 'areq_prio', "prio_level",
"urg_fwd_en" and "u64 max_bw". However, the Claimant has not demonstrated that the
attacked embodiment uses connections within the meaning of the patent-in-suit in this context.
The mere fact that QoS is managed by means of the drivers from the Linux source code is not
sufficient for this. Above all, as explained, QoS does not necessarily require the request and
establishment of connections within the meaning of patent claim 1.

306 Therefore, it is not apparent, nor is it argued by the Claimant with regard to the drivers of the
Linux Kernel, that the first module issues a connection request to a communication manager
according to feature 3. The mere existence of functions such as "qcom_icc_set_qnoc_qos()"
and "qcom_icc_qos_set()" in the Linux kernel that can be used to configure the network nodes
does not indicate that such configuration is initiated by a connection request within the
meaning of feature 3. It also remains unclear whether all network nodes along a route between
the first and second modules are configured and whether this applies to both outgoing and
returning messages.

307 Insofar, as the Claimant refers to various parameters such as "areq_prio", "prio_level",
"urg_fwd_en" and "u64 max_bw", this does not change anything. The Defendants have
explained that the first three parameters relate to the priority of a packet. ████████████████
██

██

████████████████████████████████████. In this respect, what has been said about the
"Prs" signal applies mutatis mutandis. According to the Defendants, the parameter "u64
max_bw" relates to resource and power management ████████████████████████
████████████████████. This is not a connection-related property.

308 Against this background, and even in view of the extracts from the Linux source code, it cannot be established that the attacked embodiment uses connections within the meaning of patent claim 1 and realises the further features 4 to 6

3. Claimant's application to produce evidence

309 It follows from the reasons stated above that the Claimant's application to produce evidence is not successful and must be rejected.

a) Parties' submissions

310 The Claimant is of the opinion that it has described and substantiated the patent infringement in detail. The outline of infringement is based on the fact that the design of the Defendants' NoC ICs equals the Arteris NOC technology described in Arteris NoC Chapter. It is undisputed that the Defendants have used Arteris technology in their infringing embodiments for over a decade and the Defendant 4) hired approximately 43 Arteris engineers and acquired certain Arteris SoC technology and IP in 2013. However, Defendants stated that the Arteris NoC chapter does not fully describe the NoCs on the Defendants' infringing embodiments and claim that the details of the Arteris NoC technology differs from the design used for the Qualcomm NoCs. The Claimant argues that the Defendants should be ordered to produce evidence, in particular the source code and the technical documents of the infringing embodiments, since Claimant has presented the Arteris NoC Chapter as evidence in support of its claims and does not have access to any other available evidence whereas the Defendants know and have access to these documents, as these have already been produced by the Defendants in the parallel US proceedings pending with the Western District of Texas.

311 The Defendants argue that the Claimant has not sufficiently specified any evidence to be produced. The sheer volume of data related to the source code already shows that Claimant's request is not aimed at obtaining specific evidence for showing the use of a certain claim feature, but a comprehensive US style discovery, a so-called "fishing expedition", which Rule 190 RoP does not support. Furthermore, Claimant has not specified which facts should be evidenced by the requested information. Finally, the Claimant has failed to show that the evidence to be produced by Defendants serves to substantiate the alleged infringement claim. In the Defendants' view, the Claimant has not even presented its infringement claim conclusively.

b) Requests

312 Originally, the Claimant requested, that the Defendants 3), 4) and 5) are ordered to produce the source code and the internal and external technical documents of (I.) the System on Chip (SoC) architecture of the infringing embodiments, (II.) the infringing embodiments, evidencing the communication between the processing modules through the NoC interconnect, and (III.)

the infringing embodiments, evidencing how Quality of Service (QoS) is supported and managed in Defendants NoC infrastructure.

313 Later, the Claimant amended its application and now requests:

I. The so-called "Qualcomm source code" which is specifically identified and individually addressed in the Western District of Texas Action Order dd. 26 November 2024 – see Network System Technologies, LLC v. Qualcomm Inc. et al., Case No. 1:22-cv-1331-DAE, Dkt. 259, – whereas the evidence production may be performed by (1) producing to Claimant the paper printouts of the source code already generated and provided to Claimant in the Western District of Texas WDTex Action, and by (2) allowing Claimant's party expert ▮▮▮▮▮▮ access to the aforesaid "Qualcomm source code" and access to these paper printouts, and by disclosing the "Qualcomm source code" to him again at the premises of ProSearch's Secure Facility, located at 3250 Wilshire Blvd., Los Angeles, CA 90010, USA, where it is currently stored and displayed for the purpose of production of evidence in the Western District of Texas Action, and by allowing Claimant's party expert ▮▮▮▮▮▮ to document and to describe the "Qualcomm source code", for example, by taking and making written notes and requesting printouts;

II. The so-called "NST supplemental infringement contentions" which are specifically identified and individually addressed in the Western District of Texas Action Order dd. 26 November 2024 and that were amended by Claimant on 7 February 2025, as stated in Claimant's Notice of Compliance – see Network System Technologies, LLC v. Qualcomm Inc. et al, Case No. 1:22-cv-1331-DAE, Dkt. 292; and

III. The "documents" which are specifically identified and individually addressed by Claimant in Claimant's 7 February 2025 "NST supplemental infringement contentions" – see Network System Technologies, LLC v. Qualcomm Inc. et al, Case No. 1:22-cv-1331-DAE, Dkt. 292.

314 The Defendants request that

Claimant's "Amendment of Request pursuant to R. 190 RoP" be dismissed.

c) Grounds

315 The Claimant's request for an order to produce evidence has no basis in Art. 59 (1) UPCA and Rule 190.1 RoP and is therefore unfounded.

(1)

316 According to Art. 59 (1) UPCA and Rule 190.1 RoP, the Court may, where a party has presented reasonably available and plausible evidence in support of its claims and has, in substantiating those claims, specified evidence which lies in the control of the other party or a third party, on a reasoned request by the party specifying such evidence, order that other party or third party to produce such evidence. For the protection of confidential information, the Court may order that the evidence be disclosed to certain named persons only and be subject to appropriate terms of non-disclosure

317 In accordance with the case law of the Court of Appeal ("CoA") of the UPC, as also adopted by different Local Divisions, the following principles apply to a request under Rule 190 RoP.

318 As a rule, an order to produce evidence presupposes that there is a fact that is relevant to the substantiation of claims (or defences) and that the fact requires proof by the party who is making the application (also cf. the CoA referred to above, para. 36, explaining that the purpose of these provisions is to ensure that the party who has the burden of proof will have access to the tools for carrying this burden). To this end, the applicant must set out in the application which fact it wishes to prove by which means of evidence and for what reason. No evidence is required for a fact that is not (specifically) contested (see Rule 171.2 RoP). If a fact is not relevant to the claims (or defences) being pursued, ordering the production of evidence for such a fact is generally at least disproportionate (CoA, Order of 24 September 2024, UPC_CoA_298/2024 – Panasonic/Oppo; LD Mannheim, Order of 20 October 2024, UPC_CFI_471/2023 – Dish/Aylo; LD Munich, Order of 3 April 2025, UPC_CFI_846/2024 – Promosome/BionTech).

319 An applicant for an order pursuant to Rule 190 RoP must have presented reasonably available and plausible evidence in support of its claims (or defences) before an application under Rule 190 RoP can be granted. Whether the applicant has met this requirement and, as a result, whether an order to evidence against the opponent or a third party can be considered is at the discretion of the Court. When exercising this discretion, the circumstances of the individual case must be taken into account, taking into account the mutual interests and the principle of efficient conduct of proceedings (CoA, Order of 24 September 2024, UPC_CoA_298/2024 – Panasonic/Oppo; LD Mannheim, Order of 20 October 2024, UPC_CFI_471/2023 – Dish/Aylo; LD Munich, Order of 3 April 2025, UPC_CFI_846/2024 – Promosome/BionTech).

320 The burden of presentation and proof for the existence of the prerequisites for an order to produce evidence, lies with the applicant (CoA, Order of 24 September 2024, UPC_CoA_298/2024 – Panasonic/Oppo; LD Mannheim, Order of 20 October 2024, UPC_CFI_471/2023 – Dish/Aylo; LD Munich, Order of 3 April 2025, UPC_CFI_846/2024 – Promosome/BionTech).

(2)

321 Applying the above principles to the present case, the Court exercises its discretion not to issue an order to produce evidence. The Claimant's requests are not well-founded.

322 The Claimant has already failed to present any plausible evidence to support its claim. The allegation of the infringement of the patent-in-suit is based solely on the Arteris NoC Chapter and the fact that the Defendants have acquired Arteris technology and have been using it for some time. However, the Arteris NoC chapter does not constitute plausible evidence for the Claimant's assertion. As already mentioned, the Arteris NoC chapter does not constitute conclusive evidence of infringement. Even if one were to assume that only individual features cannot be proven, it must be taken into account that the Claimant based its case from the outset on the Arteris NoC chapter and the assertion that this proves the infringement of the patent-in-suit. In doing so, the Claimant could not even assume that the Arteris NoC chapter describes the functionality of the attacked embodiment because the Arteris NoC Chapter does not originate from the Defendants nor does it refer to the Defendants' ICs and chips. The Claimant concludes that the technology described in the Arteris NoC Chapter is used solely because there have been connections between Arteris and the Defendants in the past (acquisition of technology, takeover of employees and the like). From a technical point of view, this is completely unspecific for the infringement of the patent-in-suit. The Claimant could not assume that the Arteris technology Defendants acquired was identical to the details described in the Arteris NoC Chapter. Rather, it can be presumed that, as the Defendants also argue, Arteris and the Defendants each use proprietary technology that differs in key aspects.

323 Furthermore, the Defendants also disputed the use of technology according to the Arteris NoC Chapter and even explained the different mode of operation. Only then did the Claimant request the submission of the source code. At that time, and even now, the Arteris NoC Chapter appears completely implausible, also in view of the Defendants' submissions. The Claimant entered the proceedings on the basis of the Arteris NoC Chapter with a mere assumption about the functionality of the attacked embodiment, and this assumption proved to be untenable. There is more to suggest that request for the production of the source code only serves to find a new justification for the infringement claim or ultimately confirms the Defendant's submission. However, an order to produce evidence pursuant to Rule 190.1 RoP does not serve this purpose. It already lacks a plausible evidence in support of Claimant's claim.

324 The application to produce evidence is ultimately aimed at finding out how the attacked chips possibly work. Based on claims 1 and 8 of the patent in suit, the Claimant does not specify any individual features or functionalities of the chips that are still missing for the purpose of proving patent infringement and for which specific evidence is to be presented. The sheer volume of documents that are the subject of the application for production of evidence indicates that the allegation of infringement was made completely in the dark and that the application was filed in the hope of finding any evidence of a possible infringement. This is further indicated by the fact that the application does not differ in any way from the applications in the parallel proceedings, even though different technologies are involved.

325 Against this background, the requested order cannot be granted. This is without even taking into account the fact that the source code to be inspected contains highly sensitive technical

trade secrets of the Defendants, the disclosure of which should not be ordered without good reason, even taking into account possible confidentiality measures.

326 The Claimant's statement during the oral hearing that this is a classic case for the submission of the source code in accordance with Rule 190 RoP cannot be accepted for the reasons stated above. For these reasons, the witnesses offered by the Claimant were also not heard. The Claimant's objection that the Defendants only presented a written witness statement and that the witness was not heard at all is not valid. The Claimant bears the burden of proof for the alleged infringement and has not presented its claim in a conclusive manner. In this respect, the mere dispute by the Defendants was sufficient.

327 Insofar as the Claimant indicated in the oral hearing that the request for the production of evidence could have been decided earlier and, in any case, instructions could have been given if there was a lack of plausible evidence, this cannot be accepted. In the present case, a decision on the application under Rule 190 RoP could only be made after comprehensive preparation of the case. If a production of evidence had been considered, the hearing could have been adjourned or reopened. However, even in the oral hearing, the Claimant did not present any further facts or possible evidence to make its claim conclusive or even to substantiate it.

DECISION

1. The Infringement action is dismissed.

2. The Counterclaim for revocation is dismissed.

3. The costs of the Infringement action against the Defendants 3) to 5) are to be borne by the Claimant. The costs of the Counterclaim for revocation are to be borne by the Defendants 3) to 5).

4. The value in dispute for the Infringement action is set at EUR 3,000,000. The value in dispute for the Counterclaim for revocation is set at EUR 4,500,000.

On behalf of the Presiding Judge Ulrike Voß, in her absence: Daniel Voß (Legally Qualified Judge)	

Daniel Voß (Legally Qualified Judge)	
Pierluigi Perrotti (Legally Qualified Judge)	
Andrea Scilletta (Technically Qualified Judge)	
For the sub-registrar	

INFORMATION ON APPEAL

An appeal against this decision may be brought before the Court of Appeal by any party whose claims have been unsuccessful, in whole or in part, within two months of service of the decision (Art. 73(1) UPCA, R. 220.1 (a) RoP, 224.1 (a) RoP).

INFORMATION ON ENFORCEMENT (ART. 82 UPCA, 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.

This decision was read in open court on 11 March 2026.

Note

This document is a redacted version of the Decision, with confidential information removed. It is valid without the signatures of the judges involved and the representative of the Sub-Registrar.

Daniel Voß

Digital unterschrieben von
Daniel Voß
Datum: 2026.03.11 11:10:29
+01'00'