

UPC_CFI_494/2025
UPC_CFI_1128/2025
Decision of the Court of
First Instance of the Unified Patent Court
delivered on 24/08/2026

HEADNOTES:

1. For competition law reasons, the patent holder is only required to indicate to the patent user one licensing route that satisfies the FRAND requirements (concurring with LD Munich, decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 136).
2. However, there are constellations where the implementer can demand a bilateral licence instead of a pool licence. Such constellations are for example, but non-exclusively, given when the implementer expressed its desire to obtain a multi-standard-licence or to sign cross-licencing agreements with the individual patent proprietors. The same applies when an implementer had already advanced with a significant number of other pool contributors to conclude bilateral licences for the whole pool portfolio.
3. Choosing the bilateral route does not ease the implementer’s obligation to show its willingness to take a licence throughout the course of the negotiations. In particular, an implementer’s insistence on bilateral licensing can still indicate unwillingness when the implementer fails to present comprehensible reasons for its decision to opt for bilateral agreements, failed to conclude bilateral agreements with the other SEP pool licensors within reasonable time, and refrained from placing a security. This is even more true when initially being provided a FRAND pool offer.

KEYWORDS:

Exhaustion, Art. 29 UPCA; FRAND defence, Art. 101 and 102 TFEU

CLAIMANT

**Fraunhofer-Gesellschaft zur Förderung der
angewandten Forschung e.V.,**
(Claimant) - Hansastraße 27c - 80686 -
München - DE

Represented by: Dr. Volkmar Henke

DEFENDANT

HMD Global Oy
(Defendant) - Bertel Jungin aukio 9 - 02600 -
Espoo - FI

Represented by: Oliver Bäcker

PATENT IN SUIT

Patent nr.

Proprietor

EP 2 380 167

**Fraunhofer-Gesellschaft zur Förderung der angewandten
Forschung e.V.**

COMPOSITION OF PANEL

Presiding judge

Sabine Klepsch

Judge-rapporteur

Dr. Stefan Schilling

Legally qualified judge

Peter Agergaard

Technically qualified judge

Dr. Christoph Norrenbrock

ORAL HEARING

02.and 03. July 2026

SHORT SUMMARY OF FACTS

- 1 The Claimant sues the Defendants for infringing the European Patent **EP 2 380 167** (hereinafter also referred to as the “patent in suit” or “the patent”; Exhibit BP-T 1) by producing and marketing of devices that use Android OS version 9 or later.
- 2 Claimant is a leading German research organization specializing in applied sciences. It operates numerous institutes across Germany. It is actively involved in the development of (standard-essential) patents, particularly in key technology areas, and participates in standardisation bodies to promote the development of standards. The claimant is also active in the field of patent licensing for AAC patents, which have also been licensed through the Via AAC patent pool for many years. It is the registered owner of the German, Belgian, French, Italian and Dutch parts of the patent in suit.

- 3 Defendant is a Finnish original equipment manufacturer, manufacturing feature phones, smartphones, tablets and accessories since 2016. It is the only remaining European manufacturer of smartphones.
- 4 The patent in suit is titled "Apparatus, method and computer program for upmixing a downmix audio signal" and was filed as PCT application PCT/EP2010/050279 on 12 January 2010. It claims priority of US 147815 P from 28 January 2009 and EP 09007086 from 27 May 2009. The European Patent Office published the grant of the patent in suit in the Patent Bulletin on 2 January 2013. The language of the patent is English.
- 5 With its Statement of Claim dated 04 June 2025 Claimant asserted that Defendant is infringing claims 1 and 14 of the patent in suit. Claimant directs this action against all devices, in particular smartphones and tablets, that use Android OS version 9 or later. It asserts that such devices are manufactured and/or marketed by the Defendant under the Nokia and/or HMD brand, for example, but not limited to, HMD smartphones such as the 'HMD Pulse' or 'HMD Arc', the HMD tablet 'HMD T21', as well as Nokia smartphones such as the 'Nokia C32', 'Nokia G22' and Nokia tablets such as the 'Nokia T20', etc.
- 6 Claim 1 of the patent in suit reads as follows:
 1. An apparatus for upmixing a downmix audio signal describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, the apparatus comprising:

an upmixer configured to apply temporally variable upmix parameters to upmix the downmix audio signal in order to obtain the upmixed audio signal; and a parameter interpolator, wherein the parameter interpolator is configured to obtain one or more temporally interpolated upmix parameters to be used by the upmixer on the basis of an information describing a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter, wherein the parameter interpolator is configured to separately interpolate between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and between a phase value of the first complex-valued upmix parameter and a phase value of the second complex-valued upmix parameter, to obtain the one or more temporally interpolated complex-valued upmix parameters.
- 7 Its claim 14 reads as follows:

A method for upmixing a downmix audio signal describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, the method comprising:

obtaining one or more temporally interpolated complex-valued upmix parameters on the basis of a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter, wherein the interpolation is performed separately between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

- 15 The Defendant reacted with a bilateral counteroffer on [REDACTED] and a revised counteroffer on [REDACTED] Defendant's [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]
- 16 With its second bilateral counteroffer dated 30 October 2018, Defendant [REDACTED] [REDACTED] [REDACTED] (Exhibit BP 6e, p. 18).
- 17 Claimant took up the discussion for [REDACTED] It responded with its second bilateral offer on 07 May 2019 with [REDACTED] It pointed out, however, that Defendant did not provide any information regarding the basis for their calculation, i.e. for instance sales numbers. Claimant argued that it [REDACTED] [REDACTED] [REDACTED] (Exhibit BP 6f (p.7)).
- 18 Defendant rejected this offer a couple of months later by emails dated September 25, 2019 and 27 November 2019 (Exhibit BP 6g, pdf p. 9). In its email September 25, 2019, Defendant disclosed [REDACTED]
- 19 [REDACTED] but [REDACTED] [REDACTED]
- [REDACTED] Via came back to Defendant on 28 November 2023, demanding the signing of a license agreement. Via sent a copy of the standard licence agreement and an up to date [REDACTED] in which the relevant essential patent claims of the essential patents are mapped to the representative sections of the standard [REDACTED]. The standard rate table for the Via pool again offered two options (Exhibit BP 5f, p. 109), [REDACTED] [REDACTED]
- [REDACTED] Via contacted Defendant again on 2 October 2024 and sent an updated '[REDACTED] [REDACTED] and the latest version of the [REDACTED] [REDACTED]
- 22 Defendant requested in a power point presentation dated May 26, 2024 that Claimant discloses the license agreements that are concluded between Claimant and third parties (exhibit BP 6j, p. 36). Claimant countered that given these license agreements are no longer in force, it is not obliged to disclose them. Also with its email May 26, 2024, Defendant disclosed sales numbers (see Exhibit BP 6k, p. 2).
- 23 Claimant's last (third) offer is dated 10 April 2025, which also contained the option for a split-rate based on the country. Claimant gave the [REDACTED] [REDACTED]

[REDACTED]

[REDACTED] eanwhile in March/April 2025 Claimant signed its only bilateral AAC license agreement with a third company [REDACTED] which came into force 1 June 2025. The [REDACTED]
[REDACTED]

[REDACTED]

25 Defendant did not provide a security.

STATEMENT OF THE FORMS OF ORDER SOUGHT BY THE PARTIES:

26 The Claimant requested changes to its operational requests initially laid out in the Statement of Claim with its Reply to the Defence of the Defendants (track-change version, Exhibit BP 15), dated 08 December 2025 – which were granted by the judge-rapporteur in the interim conference.

27 Hence, the Claimant finally requests according to its SoC and its Reply (08 12 2025):

A. Defendant is ordered

I.1 to cease and desist from offering, placing on the market, using or importing or processing or storing for the aforementioned purposes in the Federal Republic of Germany, the French Republic, the Republic of Italy, the Kingdom of Belgium and the Kingdom of the Netherlands, devices for upmixing a downmix audio signal, in particular smartphones or tablets that use Android version 9 or higher and make use of the USAC standard, describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, comprising the following features:

an upmixer configured to apply temporally variable upmix parameters to upmix the downmix audio signal in order to obtain the upmixed audio signal; and a parameter interpolator, wherein the parameter interpolator is configured to obtain one or more temporally interpolated upmix parameters to be used by the upmixer on the basis of an

information describing a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter, wherein the parameter interpolator is configured to separately interpolate

(a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

(b) between a phase value of the first complex-valued up-mix parameter and a phase value of the second complex-valued upmix parameter,

to obtain the one or more temporally interpolated complex-valued upmix parameters.

(Direct infringement of claim 1 of EP 2 380 167 B1)

I.2 to cease and desist from offering or offering to supply in and for the use in the Federal Republic of Germany and/or the French Republic and/or the Republic of Italy, and/or the Kingdom of Belgium and/or the Kingdom of the Netherlands, means, namely smartphones and tablets that use Android OS version 9 or higher and make use of the USAC standard, and which are suitable and intended for applying a method for upmixing a downmix audio signal describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, the method comprising:

obtaining one or more temporally interpolated complex-valued upmix parameters on the basis of a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter, wherein the interpolation is performed separately

(a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

(b) between a phase value of the first complex-valued up-mix parameter and a phase value of the second complex-valued upmix parameter; and

applying the interpolated complex-valued upmix parameters to upmix the downmix audio signal, in order to obtain the upmixed audio signal.

(Indirect infringement of claim 14 of EP 2 380 167 B1)

II. at their own expense,

1. to recall from commercial customers the infringing products pursuant to Sec. A.I.1 and placed on the market in Federal Republic of Germany, the French Republic, the Republic of Italy, the Kingdom of Belgium and the Kingdom of the Netherlands since August 6, 2018, by written notice referring to the patent infringing condition of the products as established by decision of the Unified Patent Court and with a binding commitment to reimburse any fees as well as to assume all necessary packaging and transport costs, including customs and storage costs associated with the return, and to take back said products; Claimant is to be provided with a sample of the recall letter as well as a list of recipients including names and postal addresses or, at Defendant's option, an electronic copy of all recall letters.

2. to definitively remove the infringing products pursuant to Sec. A.I.1, which have been placed on the market since August 6, 2018, from the distribution channels, taking in particular the following measures:

a. Defendant shall take all possible and reasonable measures to identify the locations and owners of such products referred to in Section A.I.1.

b. To the extent that Defendant themselves has legal or actual control over such products referred to in Section A.I.1., they must take all legally permissible and reasonable measures so that these products come into, and remain in, the immediate possession of Defendant.

c. To the extent that Defendant does not have legal or actual control over such products referred to in Section A.I.1., they must take all legally permissible and reasonable measures either (i) so that persons holding claims for surrender or destruction against those having control over said products assert such claims, or (ii) support these persons in asserting their claims.

3. destroy the infringing products referred to in Sec. A.I.1., which are directly or indirectly within their possession and/or ownership, or alternatively deliver them up for destruction by a bailiff appointed by Claimant.

III. to provide Claimant with information in an electronic, organized, computer-searchable directory on the extent to which they have committed the acts referred to in request A.I. above since August 6, 2018, stating

1. the origin and distribution channels of the infringing products broken down by year, and the names and addresses of the commercial customers;

2. the quantities produced, manufactured, delivered, received or ordered, as well as the price obtained for the infringing products; and

3. the identity of any third person involved in the production or distribution of the infringing products or in the use of the infringing process; and

4. the advertising operated, broken down by advertising media, their circulation, distribution period and distribution area, in the case of Internet advertising, the domain, the access figures and the placement periods,

5. the prime costs broken down by the individual cost factors and the profit generated, whereby electronic copies of the relevant documents (namely invoices) are to be submitted as proof of the information, whereby details outside the required information requiring confidentiality may be redacted;

IV. to pay Claimant an amount of EUR 219,000 as an interim award of damages.

B. Defendant is obligated to compensate Claimant for all damages that Claimant has suffered and will suffer as a result of the acts set forth in request A.I. above, committed since August 6, 2018.

C. Claimant is permitted, at Defendant's expense, to announce and publish the decision in whole or in part in public media, in particular in but not limited to the magazine "connect" and on "Heise online".

D. In case of any violation of the order under requests A.I., A.II. and/or A.III. above, Defendant shall pay a penalty payment to the Court in the amount of up to EUR 100,000 for each day of violation of the order pursuant to A.I., up to EUR 50,000 for each day of violation of the order pursuant to A.II., and up to EUR 10,000 for each day of violation of the order pursuant to A.III.,

E. Defendant shall bear the costs of the proceedings.

F. The judgment is directly enforceable. In the event that a security is ordered, Claimant is permitted to provide it also in the form of a bank or savings bank guarantee, and the amount of the security is determined separately for the individual enforceable parts of the judgment, with the following individual amounts proposed:

Injunction: EUR 1,000,000.-

Recall and Destruction: EUR 350,000.-

Information: EUR 150,000.-

Interim award of damages: the amount to be enforced

28 In addition, Claimant requests:

I. Defendant's requests under I. – IV. and VI., as well as the requests in the alternative under VII. – XI. in the Statement of Defense Part I are rejected.

II. Defendant's request for a stay of the proceedings pursuant to R. 266(5) RoP and referral of the questions as set out on pages 60 and 61 of the Statement of Defense Part II. is rejected.

29 With regard to the requests in Defendant's Counterclaim for revocation Claimant request:

III. Defendant's Counterclaim for revocation is rejected and EP 2 380 167 is upheld as granted.

IV. Defendant bears the costs of the Counterclaim for revocation proceedings.

30 In the alternative Claimant requests:

V. Defendant's Counterclaim for revocation is rejected insofar as it exceeds the version of the patent EP 2 380 167 according to

- Auxiliary Request I - Exhibit BP-AR I -

- Auxiliary Request II - Exhibit BP-AR II -

- Auxiliary Request III - Exhibit BP-AR III -

- Auxiliary Request IV - Exhibit BP-AR IV -

VI. to grant the claims as set out in the Statement of claim for infringement of the patent-in-suit and as amended in the Reply to the Statement of Defense, with the proviso that claims 1 and 14 as reproduced therein, are to be drafted in accordance with the Auxiliary Request deemed legally valid by the Court.

- 31 The Defendant requests with its SoD dated 6 October 2025 and Rejoinder to the Defence to the Counterclaim (11 March 2026),
- I. that the infringement action be dismissed in its entirety, and
 - II. that Claimant be ordered to bear the costs of the proceedings and the legal costs incurred by Defendant.
 - III. the European patent EP 2 380 167 is revoked in its entirety with effect in the Kingdom of Belgium, the Federal Republic of Germany, the French Republic, the Italian Republic, and the Kingdom of the Netherlands and
 - IV. Claimant shall bear the costs of the revocation proceedings.
 - V. [Non-bifurcation]
 - VI. [Stay in case of bifurcation]
 - VII. that the Court rejects Claimant's asserted claims for injunctive relief, recall, removal from distribution channels and destruction as (currently) unfounded.
- 32 In the alternative to I. and II.,
- III. that the Court rejects Claimant's asserted claims for injunctive relief, recall, removal from distribution channels and destruction as disproportionate.
- 33 In the absolute alternative to I. and II.,
- IX. that the judgment is not provisionally enforceable.
- 34 In the further absolute alternative to I. and II.,
- X. that Defendant is permitted to avert enforcement by providing security.
- 35 Defendant requests in the event that Claimant fails to act within the time limit provided for in the Rules of Procedure or set by the Court, or fails to appear at an oral hearing after being duly summoned,
- XI. that a decision by default be issued against Claimant.
- 36 With regard to Claimant's auxiliary requests Defendant requests:
- I. The infringement action is dismissed also to the extent that Claimant bases it, in the alternative under VI. of its Reply, on its Auxiliary Requests I, II, III and IV, and bears also insofar the costs of the proceedings and the legal costs incurred by the Defendant.
 - II. The European Patent EP 2 380 167 B1 is revoked in its entirety in view of the claims as granted and in view of the Auxiliary Requests I to IV with effect in the Kingdom of Belgium, the Federal Republic of Germany, the French Republic, the Italian Republic, and the Kingdom of the Netherlands,
 - III. Claimant bears the costs of the revocation proceedings and the costs for the proceedings relating to the amendment of the patent.

37 With respect to its FRAND defence Defendant requests that the competent Court

a) pursuant to Art. 15(1) of the Regulation 1/2003

asks the European Commission to transmit its opinion on questions concerning the application of Art. 101 and Art. 102 TFEU, specifically on the following question:

Is the SEP owner obliged to offer the license seeker a bilateral license on FRAND terms upon license seeker's request, or can the SEP owner rely solely on the fact that a license for its SEPs is available through a patent pool, while refusing engagement in bilateral license negotiations?

b) pursuant to Art. 15(2) of the Regulation 1/2003

to forward to the European Commission a copy of the written judgment without delay after the full written judgement is notified to the parties, in the event that the Court:

(1) considers it sufficient for the SEP owner to fulfil its FRAND-obligations by offering only a pool licence, even upon the license seeker's request for a bilateral licence, and/or

(2) does not refer the preliminary questions listed below (para. 144) regarding the SEP holder's general obligation to offer the license seeker a bilateral license upon request to the CJEU.

c) pursuant to Art. 15(2) of the Regulation 1/2003

to forward to the European Commission a copy of the written judgment without delay after the full written judgement is notified to the parties, in the event that the Court

(1) does not follow the European Commission's approach set out in its Amicus Curiae brief dated 15 April 2024 submitted in the proceedings before the Higher Regional Court Munich (docket-no: 6 U 3824/22 Kart) regarding the strictly sequential assessment of the reciprocal FRAND-obligations of the SEP owner and the license seeker set forth by the CJEU in its Huawei vs. ZTE decision (C-170/13) and/or

(2) does not refer the preliminary questions listed below (para. 79) regarding the assessment of reciprocal FRAND-obligations under Huawei vs. ZTE (C-170/13) to the CJEU.

RELEVANT PROCEDURAL STEPS

38 On request of Defendant Claimant was ordered by the judge-rapporteur on 19 December 2025, based on the mutual agreement found during the case management hearing on 16 December 2025, to submit a copy of the bilateral AAC Patent License Agreement concluded with [REDACTED] which came into force 1 June 2025, subject to that the document is classified as confidential information. Claimant provided the document on 16 January 2026.

39 The other requests for the production of evidence by Defendant were dismissed.

POINTS AT DISPUTE

40 The parties are in dispute with respect to the claim construction, validity of the patent in suit and infringement. The Defendant also raised an exhaustion defence and a FRAND defence, which are objected by Claimant.

CLAIMANT'S POSITION

CLAIM CONSTRUCTION

- 41 Claimant is of the opinion that the patented solution does not require the input into the interpolator itself to necessarily be complex-valued. Instead, the interpolator merely obtains temporally interpolated upmix parameters on the basis of “an information describing” first and second complex-valued upmix parameters. Such information describing a complex-valued parameter can, for example, be the magnitude and/or phase of said complex-valued parameter.
- 42 Claimant argues that such information can be real-valued, so long as it describes a complex-valued upmix parameter. Hence, the (real-valued) magnitude and the (real-valued) phase of a complex-valued upmix parameter both fulfil this requirement. From the standpoint of the technical purpose of the invention, the precise format in which the parameters are conveyed does not make a difference after all.
- 43 Claimant contests Defendant's argument that the interpolation of the magnitude can only result in positive values, and that a negative interpolation result could only be achieved by phase interpolation or mixed, i.e., non-separate interpolation of the magnitude and the phase. Claimant refers to the circumstance, that the patent uses both terms “magnitude” and “absolute value”, as shown, e.g., in dependent claim 12 and as opposed to independent claim 1. The description states that the magnitude “may for example” be – but does not necessarily have to be – an “absolute value”. The patent therefore understands the term “magnitude” broader than the term “absolute value”. Fig. 5 cannot be considered limiting to the claim because it shows “a graphical representation 500 of different types of interpolation between two complex values” - not between two upmix parameters. Fig. 5 merely serves to explain some underlying thoughts of the invention.
- 44 Claimant asserts that the person skilled in audio signal processing would readily understand that the interpolation result of a “magnitude” can also be negative. According to Claimant this has been the case previously and is no different in the teaching of the patent. According to the patent the upmixing is generally performed by multiplying an input signal vector with a real-valued upmix matrix **H** to obtain an output signal vector. The matrix **H** is to be determined in the conventional manner – i.e., according to the algorithms of the MPEG Surround standard (MPS). In distinction to the known upmixing as per the MPS standard, the patent-in-suit (as well as the USAC standard) envisages that additionally IPD (inter-channel phase) data is used for applying “an additional phase shift”

to the signals, to “recreate the phase relation between channels of the original signal”. To allow for this, the matrix elements of the upmix matrix **H** shall no longer just be real-valued, but complex-valued instead. Yet, the patent-in-suit does not seek to redefine the upmix matrix **H** entirely.

VALIDITY

- 45 Regarding validity of the patent Claimant is of the opinion that US 2008/0031463 A1 (Exhibit HLCC 7) relates to an entirely different technique, and thus differs from the subject-matter of claim 1 in several aspects. HLCC 7 proposes the use of sidechain information, which is intended to assist the decoder in obtaining an (upmix) audio signal from the downmix audio signal, which is as similar as possible to the original audio signal. While HLCC 7 uses the term “interpolation” as well (as, e.g., in Fig. 5A), the interpolation considered by HLCC7 is according to the Claimant technically entirely different from the interpolation according to the patent. Particularly, the “Subband Angle Control Parameter” in HLCC 7 represents (HLCC 7, Table 2) “a smoothed time average across subband of difference between angle of each bin in subband for a channel and that of the corresponding bin of a reference channel”. HLCC 7 does thus not disclose an “interpolation” between two subsequent parameters, but rather a smoothing of the one received “Subband Angle Control Parameter” over the bins of a subband, either in frequency or in time. It does not teach an interpolation between consecutive upmix parameters, neither in frequency nor in time domain. Furthermore, HLCC 7 explicitly states in par. [0215] that an interpolation of the amplitude is not quite necessary “because there tends to be more natural continuity in amplitude from one subband to the next”. This would also guide the skilled person away from implementing any amplitude interpolation.
- 46 When it comes to HLCC 8 (International Standard ISO/IEC 23003-1, MPEG Surround Standard), Claimant points out that Defendant had conceded that HLCC 8 fails to disclose an interpolation of phase values of an upmix parameter, and consequently also fails to disclose the separate interpolation of magnitude and phase values of upmix parameters. Claimant further points out that document JPH 1-205200 (Exhibit HLCC 9, english translation Exhibit HLCC 9a, 9b) does not relate to an interpolation of upmix parameters but to an interpolation of a position and amplitude of a peak within a spectrum. The position and amplitude of such peak, however, (a) do not relate to a complex number, and (b) do not correspond to an upmix parameter. When HLCC 9a refers to “amplitude” and “phase”, this does not correspond to a “complex-valued upmix parameter” as claimed, but to properties of the coded audio signal, i.e., properties of the acoustic wave which is coded in the bitstream.
- 47 Claimant is of the opinion that the document “Speech Analysis/Synthesis Based on a Sinusoidal Representation” in IEEE Transactions on Acoustics, Speech, and Signal Processing, Vol. ASSP-34, No. 4, August 1986 (Exhibit HLCC 10) at best discloses an interpolation of amplitude and phase properties of an acoustic wave. Nowhere does HLCC 10 disclose anything about upmix parameters, let alone complex-valued upmix

parameters that are to be temporally interpolated. At best, the skilled person would have added an interpolation of the properties of the acoustic waves – each property being interpolated separately – to the decoding method of HLCC 8. He or she would however not have added a separate interpolation of a phase value of a complex-valued upmix parameter to the interpolation method of HLCC 8.

- 48 Claimant considers the document “Background, Concept, and Architecture for the Recent MPEG Surround Standard on Multichannel Audio Compression” in J. Audio Eng. Soc., Vol. 55, No. 5, 2007 May (Exhibit HLCC 11) not being able to question inventiveness, either. According to the Claimant HLCC 11’s teaching is not a “separate” interpolation between magnitude and phase values as per the patent in suit. Different from the patent, HLCC 11 had obviously not grasped the disadvantages of the standard linear interpolation of a complex number as it does not consider its alternative representation in terms of magnitude and phase to begin with. This is according to Claimant the very interpolation criticized by the patent.
- 49 Claimant requests, should the Local Division arrive at a different conclusion regarding the validity of the patent in suit as granted, that it be maintained in amended form, based on Auxiliary Requests I to IV (in that order).

INFRINGEMENT

- 50 Regarding infringement the Claimant argues that the patent does not require that the input into the interpolation (the interpolator) comprises complex-valued upmix parameters. Instead, it is sufficient if “information describing a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter” is the input, such as a magnitude value and a phase value. Claimant claims that Defendant effectively had conceded that this is realized in the USAC standard. Specifically, the Defendant had conceded that the interpolator as per the USAC standard receives a magnitude value and a phase value separately.
- 51 Claimant asserts that a negative interpolation result does not indicate that the interpolation is not separate, but rather that at least one of the values between which it is interpolated is negative. The standard prescribes two entirely separate interpolation algorithms for magnitude and phase. The interpolation of the magnitude is defined in MPS and (only) referenced in USAC. The separate interpolation of the phase is defined only in USAC, as a sort of enhancement to the MPS standard – mirroring exactly the teaching of the patent.

EXHAUSTION DEFENCE

- 52 Claimant points out that [REDACTED] also develops and manufactures other products and that a concluded license between Via and [REDACTED] does not necessarily cover the Android system. [REDACTED]

[REDACTED]

53 Claimant argues that the passages from the [REDACTED] cited by Defendant itself prove that the Android OS software cannot be [REDACTED] under this agreement. The Android OS software, however, [REDACTED]

[REDACTED] Unlike consumer applications that are designed for immediate installation and use by any end user without technical expertise, Android OS requires significant technical intervention before it can function on a device. While it is correct that [REDACTED] is a licensee of the AAC patent pool, it is only [REDACTED]

[REDACTED] Accordingly, [REDACTED] also does not report sales of its Android OS, nor does it pay royalties to Via for it.

54 Claimant asserts to have made it very clear to Defendant already in 2018 that there [REDACTED]

[REDACTED]

FRAND DEFENCE

55 Claimant criticises that Defendant cites the Commission's brief from proceedings it lost, while concealing the authoritative judicial determination that followed. The formalistic approach advocated in the amicus curiae brief is not only against the established jurisprudence of the Member States but also rejected by the Courts of the UPC.

56 Claimant is of the opinion to have, in contrast to Defendant, complied with their FRAND obligations. That is because Claimant provided Defendant with several bilateral FRAND license offers, of which the last one was conveyed on April 10, 2025. In addition, Defendant has also been provided with several FRAND pool offers, the latest being received by Defendant in October 2024. Pursuant to case law of the UPC and German national courts (see above), it is already sufficient if one of these licensing routes is offered by a claimant.

57 Claimant further argues that it did not block the disclosure of the allegedly "highly relevant [REDACTED] to eliminate HMD's exhaustion concerns", as it had already informed HMD on October 22, 2018 that [REDACTED]

58 Claimant is of the opinion that [REDACTED]

[REDACTED]

[REDACTED]

59 With respect to the pool offer Claimant argues that Via had done everything that was necessary to satisfy the requirements for an offer under the Huawei v. ZTE framework.

The pool [REDACTED]

[REDACTED] Furthermore, the presumption that Via's most recent offer complies with FRAND principles is also based on the fact that the AAC pool constitutes, with nearly 1,000 licensees, the gold standard for licensing in the area of audio coding. A list of all pool licensee's is available on Via's website (Exhibit BP 4).

60 Claimant claims that over the course of seven years and up to the present day, Defendant had not raised a single detailed complaint with Via or against any of the offers provided by Via.

61 With respect to the demanding of a bilateral licencing path Claimant argues that Defendant provided no evidence of the commercial benefits it claims to pursue. Defendant asserts that [REDACTED]

[REDACTED]. However, Defendant provided no evidence that [REDACTED]

[REDACTED] Claimant asserts that regarding itself there are no [REDACTED] that Defendant has sought for, nor is there any long-standing business relationship. The same seems also to be true for the other licensors of the pool.

62 Referring to its bilateral offers, Claimant argues that it had provided Defendant with a minimally redacted concluded patent license agreement with Claimant's first offer of 2017, which inter alia, [REDACTED]

[REDACTED] which was still active at that time and which could have served as source of information to Defendant, if Defendant had actually considered it. According to Claimant, [REDACTED] and did never comment on the redacted agreement contained in the offer of 2017 during those initial years. At this point in time, [REDACTED]

63 Claimant states that its royalty rates [REDACTED]

[REDACTED] Claimant asserts [REDACTED]

Via AAC pool, with nearly 1,000 licensees, is [REDACTED]

- 64 Claimant rejects Defendant's criticism regarding the aging of the patents. When selectively pointing to Claimant's statement that [REDACTED]
[REDACTED]
- 65 Regarding the volume discounts Claimant asserts that at least on this specific licensing market, there is a practice of tiered volume discounts which is accepted by nearly the entire worldwide market. There is no indication that nearly 1,000 licensees entered into agreements with Via without the volume discounts being applied.
- 66 Claimant points out that the Via offer just as Claimant's last (third) bilateral offer contains also an alternative rate structure, offering [REDACTED] in recognition of the reduced patent coverage in those markets. Claimant argues that [REDACTED]
[REDACTED] when Claimant made its initial offer. However, Claimant claims that it has since become an adopted approach in licensing agreements, which is why Claimant therefore sought to provide Defendant with the opportunity to select the most favourable licensing route for its own circumstances.
- 67 Claimant claims it to be clear that no compensation is required or sought for devices that do not implement any of the patents in the portfolio, hence with respect to [REDACTED]
[REDACTED]
- 68 [REDACTED]
[REDACTED] is not unreasonable as a bilateral license is considerably more expensive than a pool license and it requires a whole lot more administration and time-consuming negotiations. [REDACTED]
[REDACTED] had been deducted.
- 69 Referring to the [REDACTED] [REDACTED] Claimant points out that this was [REDACTED]
[REDACTED] [REDACTED] and could not have been disclosed to Defendant at a time when it did not yet exist. This is currently the [REDACTED]. The five bilateral license agreements [REDACTED] and which have also been discussed during the R.190 RoP proceedings (cf. Court order of December 19, 2025) all expired before 2024 and thus before the point in time when Defendant started to request the disclosure of comparable "active" license agreements.
- 70 Claimant explained that in the negotiations [REDACTED]
[REDACTED]
[REDACTED] Claimant asserted that during negotiations [REDACTED]
[REDACTED]. In other words, it was the parties' shared understanding that the overwhelming majority of devices were sold in [REDACTED]
[REDACTED]

71 Claimant explained that [REDACTED]

[REDACTED] As reasons, [REDACTED]

DEFENDANT'S POSITION

CLAIM CONSTRUCTION

- 72 Defendant claims that the parameter interpolator is configured to use first and second complex-valued upmix parameters to temporally interpolate one or more upmix parameters which may be used for upmixing. In that respect Defendant is of the opinion that the separate interpolation requires that not only the upmix parameters that are used by the upmixer are complex-valued (i.e., the result of the interpolation process), but also the parameters that are input into the interpolation process.
- 73 Defendant argues that this already follows from the clear wording of the features which require the parameter interpolator to separately interpolate between magnitude/phase values of the first/second complex-valued upmix parameter. Also, the feature addressing the parameter interpolator shows that the upmix parameters have to be obtained on the basis of an information describing a first/second *complex-valued* upmix parameter. This is also evident from the figures of the patent, in particular, figure 1. It illustrates that the parameters input into the parameter interpolator for the magnitude/phase interpolation (i.e., the first/second complexed-valued upmix parameters 142 and 144) are complex-valued.
- 74 Defendant argues that a separate interpolation of the magnitude according to this feature can only result in positive values. A negative interpolation result to the contrary could only be achieved by phase interpolation or mixed, i.e., non-separate interpolation of the magnitude and the phase. The phase is a cyclic quantity measured in an interval such as $-\pi$ to π or -180° to 180° . Therefore, the phase interpolation can result in negative values.

VALIDITY

- 75 Defendant challenges the validity of the patent based on HLCC 7. Defendant argues that HLCC 7 describes interpolation across frequency in detail but discloses also that temporal interpolation can be performed in the same manner. According to the Defendant, it is apparent that this statement applies to all instances of interpolation that are disclosed in the document, hence can be applied to temporal interpolation, as well. HLCC 7 discloses that the amplitude interpolation can be applied in any step which corresponds to amplitude changes. This is derivable from paragraph [0215] of HLCC 7 according to which the magnitude interpolation can optionally be employed in the decoding process as well.
- 76 Defendant is of the opinion that the claimed solution of a separate interpolation of magnitude and phase is at least not inventive in light of HLCC 7.

- 77 Defendant asserts that due to the fact that the separate processing/interpolation of magnitude and phase of a complex-valued parameter is generally known to be advantageous, the skilled person has sufficient reason to come to the patented solution by combining the MPEG Surround standard (HLCC 8) with HLCC 9. HLCC 8 discloses a magnitude interpolation based on the same parameters (inter-)channel level difference (CLD) and inter-channel correlation or coherence (ICC) in section 6.5.1. Thus, the parameters used for interpolation of the magnitude value in HLCC 8 are the same complex-valued upmix parameters as in claim 1. HLCC 8 discloses individual interpolation of the magnitude but lacks disclosure of a separate interpolation of the phase of the upmix parameter, at least according to the Patentee's claim construction in the statement of claim.
- 78 Defendant argues that it was known to the skilled person decades before the priority date that the separate processing/interpolation of magnitude and phase of a complex-valued parameter is advantageous, as taught in HLCC 9, for example. On page 5 of HLCC 9a, a separate interpolation of the amplitude (i.e., the magnitude) by the amplitude information interpolation unit and of the phase by the phase interpolation unit is disclosed. It is described as advantageous for obtaining high audio quality that the separate interpolation of magnitude and phase is preferable. Also, HLCC 10 discloses the separate interpolation of amplitude, i.e., magnitude, and phase.
- 79 Defendant further claims that the patented solution is not inventive in light of HLCC 11. The Examiner in the examination proceedings found that the only difference between HLCC 11 and claim 1 was that HLCC 11 discloses separate interpolation of real part and imaginary part of the complex-valued upmix parameters instead of magnitude and phase. Based on this distinguishing feature, the objective technical problem could be formulated as an interpolation process with improved audio quality. As complex numbers can equivalently be written as real and imaginary part or as magnitude and phase, it is obvious for the skilled person that in the method of HLCC 11, the real and imaginary parts can be exchanged for magnitude and phase to arrive at an alternative and equivalent interpolation process. The important aspect of the invention is the separate interpolation, which was already part of HLCC 11.

INFRINGEMENT

- 80 The Defendant claims that the patent is not infringed because the USAC/MPS standard does not interpolate complex-valued parameters. Instead, the interpolator is only fed with real-valued parameters and elements. In the USAC standard, complex-valued parameters are only obtained after the interpolation process.
- 81 According to the Defendant, the parameters CLD, ICC, CPC and IPD (i.e., the input of the interpolation process) are not complex-valued because they are real numbers. A parameter is complex-valued if it is a complex number including a real and an imaginary part. However, the parameters CLD, ICC, CPC and IPD only consist of a real part, but not of an imaginary part.

- 82 Defendant further claims that complex-valued parameters are only obtained after the interpolation process by combining the already interpolated magnitude and the already interpolated phase, which corresponds to a phase synthesis by modifying the mix-matrix M2 as follows:

$$\tilde{\mathbf{M}}_2^{n,k} = \begin{bmatrix} e^{j\bar{\theta}_1^{n,K(k)}} & 0 \\ 0 & e^{j\bar{\theta}_2^{n,K(k)}} \end{bmatrix} \begin{bmatrix} M_{11}^{n,k} & M_{12}^{n,k} \\ M_{21}^{n,k} & M_{22}^{n,k} \end{bmatrix}$$

- 83 Defendant argues that M2 depends on W2. The matrix W2 is interpolated. W2 is either derived from R2 or may be identical to it. As R2 may have negative entries, the result of the W2 interpolation (i.e., the mix-matrix M2) can also be negative. Defendant asserts that a magnitude interpolation can yield only positive results and never negative ones, whereas a phase interpolation may produce either positive or negative values. This means that, based on whether the result of the interpolation is positive or negative, the conclusion can be drawn, that if the result is negative, it cannot be a (separate) magnitude interpolation.

EXHAUSTION DEFENCE

- 84 Defendant points out that the allegedly infringing technology is embedded in the AAC Codec, which is an integral part of [REDACTED] Android operating system. Defendant refers to the fact that [REDACTED] is a licensee within Via's AAC pool licensing program and thus has also obtained a patent license under the Claimant's AAC patents (including the patent in suit) as said patents are part of the Via pool. Defendant is of the opinion that the one and only economically viable use of said licensed AAC codec or operating system is the integration into mobile devices, such as the devices marketed by HMD. Hence the exhaustive effect resulting from the patent license Via – on behalf of the Claimant – has granted to [REDACTED] also covers the attacked embodiments. As Claimant is of the opinion that the attacked, allegedly infringing technology is an integral part of Android, it is also covered by said agreement.

- 85 Defendant asserts that upon examining Via's [REDACTED] it becomes evident that Via has explicitly granted consent for the marketing not only of devices or software manufactured by the licensee itself but also for the marketing of a device incorporating said software. The Fraunhofer FDK AAC Codec qualifies [REDACTED]

- 86 Defendant is of the opinion it could even be left open whether [REDACTED]

[REDACTED] In any case the [REDACTED]

- [REDACTED]
- 87 The mere presence of a disclaimer on [REDACTED] website, which refers to the need for a patent license, does not preclude the effect of exhaustion in the present case. Exhaustion is a factual matter that arises solely from [REDACTED]
- 88 In addition, Defendant argues that exhaustion may also result from a bilateral license agreement between the Claimant and [REDACTED]. Given that the Claimant serves as a supplier for [REDACTED], Defendant, in letters dated [REDACTED] and [REDACTED], expressed its concerns that the Claimant's rights are already exhausted due to a bilateral license agreement between the Claimant and [REDACTED]

FRAND DEFENCE

- 89 Defendant is of the opinion that the CJEU's decision in Huawei v. ZTE does not only provide for a framework concerning the out-of-court licensing negotiations but also provides for a judicial order of examination when it comes to the assessment of a FRAND defence. Defendant refers to the European Commission's Amicus Curiae brief dated 15 April 2024, filed in the context of litigation between VoiceAge and HMD (Exhibit HL-FRAND 7(a)).
- 90 Defendant is of the opinion that contracting obligations under antitrust law require the SEP-holder (the Claimant) to engage in bilateral license negotiations upon the license seeker's (HMD) request, and cannot simply refer the license seeker to the possibility of a pool license. The market imbalance of licensing of technology rights, which is crucial for a functioning competition, is exacerbated when SEP holders form patent pools without an obligation to license bilaterally. The already existing market dominance of individual SEP holders is further strengthened by combining their rights with those of other SEP holders, thereby enabling the patent pool to exercise joint market power see (published drafts of the revised Technology Transfer Block Exemption Regulation (TTBER) and Technology Transfer Guidelines (C/2025/5024, para. 279). Once the license seeker exercises its right to obtain a bilateral license – as the TT Guidelines state that the license seeker “should be allowed to acquire a license outside a pool” – the SEP holder is required to comply with that request. Forcing the license seeker to accept a pool license – especially when the pool is not a party to the proceedings and the SEP-holder cannot negotiate on its behalf – creates an imbalance and coerces the license seeker into accepting a pool license agreement, despite justified FRAND-objections to the pool offer and a legitimate request for bilateral negotiations
- 91 Defendant asserts that Via mutually agreed with Defendant that Defendant will exclusively conduct bilateral license negotiations with the respective Via-licensors instead of taking a Via pool license. Via indicated that the Defendant has the option to negotiate bilateral licenses directly with the individual licensors instead of taking a pool license in the same first letter (exhibit HL – FRAND 3). And finally, the Claimant had

explicitly confirmed that the decision whether to pursue a pool licence or a bilateral licence, rests with the license seeker. Given the (mostly) ongoing bilateral negotiations between the Claimant and HMD from [REDACTED] to the present, the Claimant was already fully aware of the [REDACTED]

92 Defendant argues that while the Claimant cannot rely on any actions taken by the Via pool to fulfil its own bilateral FRAND obligations from the outset, all efforts by the Claimant to present its bilateral offer from 22 December 2017 and its conduct to date as FRAND have been unsuccessful. Defendant asserts that one of the main obstacles to concluding a bilateral licence agreement with the Claimant is the Claimant's ongoing refusal [REDACTED]

93 Defendant claims that Claimant had not provided any evidence to show that [REDACTED] The discrepancy between the Headline Rate and the actual agreed royalty rate is also [REDACTED]

94 Defendant criticises that Claimant refuses to disclose [REDACTED]

[REDACTED] Even if one were to assume that [REDACTED] could be added to a certain – justified – extent, this would fundamentally presuppose that such [REDACTED] was applied to pool rates actually implemented in practice.

95 Defendant argues that the direct application of the [REDACTED]' approach fails – at least with respect to the Claimant's AAC portfolio – as Claimant itself admits that [REDACTED]

96 Defendant considers [REDACTED] being unFRAND as they highlight that the "standard rate" for royalties has been set artificially high, with discounts only available at [REDACTED], thereby not serving as a legitimate basis for applying [REDACTED] discounts.

97 Defendant is of the opinion that it was nevertheless going beyond its obligations in the interest of advancing negotiations and achieving the conclusion of a FRAND license agreement, submitted FRAND counteroffers to the Claimant on [REDACTED]

98 Regarding the comparison with the [REDACTED] Defendant is of the opinion that one has to calculate [REDACTED]

[REDACTED] Based on Claimant's premise, [REDACTED]

Defendant argues that [REDACTED]

Defendant argues that [REDACTED]

100 Defendant is of the opinion that [REDACTED]

101 On an auxiliary basis, Defendant claims that the Claimant's requests are too far reaching. First, the requested decision covers an excessively long time period. Second, parts of the requests are insufficiently specified. Third, the claims are also partially time-barred. Fourth, the claim for injunctive relief, recall, removal and destruction are disproportionate and are therefore not to be granted. Fifth, even beyond these general deficiencies, the requests are to be dismissed in detail, at least in part.

102 In addition, reference is made to the parties' submissions and exhibits and the recording of the oral hearing.

GROUND FOR THE ORDER

103 The infringement action is well-founded, whereas the counterclaim for revocation is unfounded. The Defendant did not successfully question the validity of the patent in suit (see below section F.). The attacked embodiments using Android OS 9 or higher make literal use of the features of claims 1 and 14 of the patent (see below section G.). The exhaustion defence is without merit (see below section H.). The Defendant cannot successfully raise a FRAND defence and thus the Claimant's claims are not precluded by the Defendant's FRAND defence based on Article 102 TFEU (see below section J.).

A. APPLICANT'S ENTITLEMENT TO BRING ACTIONS

104 Claimant's entitlement to bring the present action against Defendant is not disputed.

B. INTERNATIONAL JURISDICTION

105 The UPC's international jurisdiction and the LD Hamburg's competence is not disputed. According to R. 19.7 RoP this shall be treated as a submission to the jurisdiction of the Court and the competence of the division chosen by the claimant.

C. ADMISSIBILITY OF CHANGE OF CLAIM, R. 263

106 The change of claims requested with in the Reply was not contested and granted by the judge-rapporteur in interim conference.

D. ADMISSIBILITY OF AR

107 The admissibility of the four auxiliary requests was not challenged and fulfils the requirements of R. 30 RoP.

E. THE PATENT

I. BACKGROUND

108 The patent in suit refers to the upmixing of a downmix audio signal, and especially to the interpolation of parameters used for the upmixing process, para. [0001]. In particular, it concerns a magnitude-preserving interpolation of upmixing parameters for parametric multichannel audio coding, para. [0002]. In this context, 'upmixing' or 'downmixing' generally refers to the conversion of an audio signal with fewer channels into an audio signal with more channels, e.g. mono to stereo, or vice versa.

109 The patent refers to recent development in the area of parametric audio coding delivering techniques for jointly coding a multi-channel audio (e.g. 5.1) signal into one (or more) downmix channels plus a side information stream. These methods are generally known by the names "Binaural Cue Coding" (abbreviated to "BCC"), "Parametric Stereo" (abbreviated to "PS") and "MPEG Surround" (abbreviated to "MPS"), para. [0003].

110 Such side information typically contains perceptual features (cues) that are relevant to human spatial hearing. These include, for example, inter-channel level differences (ILD), inter-channel correlation or coherence (ICC), inter-channel time differences (ITD) or inter-channel phase differences (IPD), para. [0007]. This is designed to create a spatial auditory impression in humans, for example, because a tone or a sound is perceived by one ear as louder (ILD) and/or earlier (ITD) than by the other.

111 These parameters are in some cases transmitted in a frequency and time resolution adapted to the human's auditory resolution. The update interval in time is determined by the encoder, depending on the signal characteristics. This means that not for every sample of the downmix-signal, parameters are transmitted. In other words, in some cases a transmission rate (or transmission frequency, or update rate) of parameters describing

the abovementioned cues may be smaller than a transmission rate (or transmission frequency, or update rate) of audio samples (or groups of audio samples), para. [0008]. To facilitate the understanding, Fig. 3 shows a graphical representation of a timing relationship between samples of the downmix audio signal ("x") and the corresponding decoder side information ("SI"), para. [0040].

112 Since the decoder may in some cases have to apply the parameters continuously over time in a gapless manner, e.g. to each sample (or audio sample), intermediate parameters may need to be derived at decoder side, typically by interpolation between past and current parameter sets, para [0009].

113 However, it has been found that many conventional binaural cue coding decoders provide multi-channel output audio signals with degraded quality if the side information is received at a lower update frequency than the downmix signal, para. [0015].

114 In view of this problem, the patent in suit sets as its objective that there is a need for an improved concept of upmixing a downmix audio signal into an upmixed audio signal, which reduces a degradation of the hearing impression if the update frequency of the side information is smaller than the update frequency of the downmix audio signal, para. [0016]. The technical problem is intended to be solved by the invention as defined by the independent claims.

115 The invention proposes that a separate temporal interpolation of the magnitude value of an upmix parameter and of the phase value of the upmix parameter brings along a good hearing impression of the upmixed audio signal because a variation of the magnitude of the interpolated upmix parameter is kept very small. It has been found that an unnecessarily large variation of the amplitude of the upmix parameter may result in an audible and disturbing modulation of the upmixed audio signal. In contrast, by separately interpolating the amplitude of the complex-valued upmix parameters from the phase value thereof, the amplitude variation caused by the interpolation is kept small (or even minimized), even in the presence of a large phase difference between the complex value of the first (or initial) upmix parameter and the complex value of the second (or subsequent) upmix parameter, para. [0019].

116 This shall be implemented by claim 1 and the dependant claims.

117 **Claim 1** can be broken down into the following features:

1. An apparatus for upmixing a downmix audio signal describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, the apparatus comprising:

- 1.1 an upmixer configured to apply temporally variable upmix parameters to upmix the downmix audio signal in order to obtain the upmixed audio signal; and

- 1.2 a parameter interpolator, wherein the parameter interpolator is configured

- 1.2.1 to obtain one or more temporally interpolated upmix parameters to be used by the upmixer

1.2.2 on the basis of an information describing a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter,

1.3 wherein the parameter interpolator is configured to separately interpolate

1.3.1 (a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

1.3.2 (b) between a phase value of the first complex-valued upmix parameter and a phase value of the second complex-valued upmix parameter,

1.3.3 to obtain the one or more temporally interpolated complex-valued upmix parameters.

118 **Claim 14** can be broken down into the following features:

14. A method for upmixing a downmix audio signal describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, the method comprising:

14.1 obtaining one or more temporally interpolated complex-valued upmix parameters on the basis of a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter,

14.2 wherein the interpolation is performed separately

14.2.1 (a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

14.2.2 (b) between a phase value of the first complex-valued upmix parameter and a phase value of the second complex-valued upmix parameter; and

14.3 applying the interpolated complex-valued upmix parameters to upmix the downmix audio signal, in order to obtain the upmixed audio signal.

II. CLAIM CONSTRUCTION OF CLAIMS 1 AND 14

1. Principles of claim construction

119 According to Art. 69 EPC in conjunction with Art. 1 of the Protocol on its interpretation, the patent claim is not only the starting point, but the definitive basis for determining the protective scope of a European patent. The interpretation of a patent claim does not depend solely on its exact wording in the linguistic sense. Rather, the description and the drawings must always be taken into account as explanatory aids for the interpretation of the patent claim and not only be used to clarify any ambiguities in the patent claim. However, this does not mean that the patent claim serves only as a guideline and that its scope may extend to what, from a consideration of the description and drawings, the patent proprietor has contemplated. The patent claim is always to be interpreted from the point of view of a person skilled in the art (Court of Appeal, UPC_CoA_1/2024, Order of 13 May 2024, App_8/2024 – VusionGroup SA v Hanshow Technology Co. Ltd et al.; UPC_CoA_335/2023, Order of 26 February 2024, App_576355/2023 - 10X Genomics and

Harvard/Nanostring; Order of 11 March 2024, GRUR-RS 2024, 2829, headnote 2. and para. 73 - 77 - Nachweisverfahren; LD Düsseldorf, UPC_CFI_452/2023, Order of 9 April 2024, p. 13, GRUR-RS 2024, 7207, para. 49). Additionally, the skilled person is taking the purpose of every patent claim into account, to provide the average person skilled in the art with a technical teaching which, when reworked, leads to the intended success of the invention.

2. Person skilled in the art

120 The person skilled in the art typically holds a university degree in electrical engineering, information technology, or physics and has several years of professional experience in the field of audio encoding and its standardization, especially in the upmixing of multi-channel audio signals. Contrary to the Defendant's proposal the skilled person is not defined by someone who participates in working group meetings related to the respective standardization projects and follows them closely, because active participation in the standardization process exceeds the average activity scope of the skilled person. While the skilled person is certainly familiar with standardization and also follows the developments from publications in the field, he or she is not necessarily an advanced scientist or practitioner in the group that contributes in developing the standard itself.

121 Some features of the claim require a closer definition:

3. Features 1 and 1.1

1. An apparatus for upmixing a downmix audio signal describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, the apparatus comprising:

1.1 an upmixer configured to apply temporally variable upmix parameters to upmix the downmix audio signal in order to obtain the upmixed audio signal; and

122 Feature 1 requires an apparatus for upmixing a downmix audio signal describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels.

123 A downmix audio signal is an audio signal which has been processed so that it comprises fewer channels than it originally did. Upmixing such a downmix audio signal means decoding the signal to contain more channels than the downmix audio signal. In the simplest example, the downmix audio signal comprises one channel (i.e., mono) and the upmixed audio signal comprises two channels (i.e., stereo), para. [0036].

124 Feature 1.1 defines that the apparatus of feature 1 comprises an upmixer that is configured to apply upmix parameters when upmixing the audio signal. These upmix parameters are temporally variable.

4. Feature group 1.2

1.2 *a parameter interpolator, wherein the parameter interpolator is configured*

1.2.1 *to obtain one or more temporally interpolated upmix parameters to be used by the upmixer*

1.2.2 *on the basis of an information describing a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter,*

125 Feature groups 1.2 and 1.3 (see further below) address the parameter interpolator, which is the entity that temporally interpolates between subsequent upmix parameters.

126 Feature 1.2 addresses how the parameter interpolator obtains the interpolated upmix parameters in general, while further details of this step are described in feature group 1.3.

127 Feature 1.2.2 clearly states that the parameter interpolator is configured to obtain the upmix parameters *on the basis of an information* describing a first/second complex-valued upmix parameter, which is understood to cover that the upmix parameters can be described by real-values, as well, in particular by magnitude and phase. Any interpretation in the sense that input to the interpolation requires complex values, i.e. the multiplication product of magnitude and phase, would rob the fragment “*an information describing*” of any meaning and would narrow the teaching of the patent without necessity.

128 Neither the language of feature 1.2.2 nor its context require that the information describing the complex-valued upmix parameter is itself complex-valued. As the patent is based on the known MPS standard, the upmix parameter matrix **H** is to be determined in the conventional manner – i.e., according to the algorithms of the MPS standard. In distinction to the known upmixing as per the MPS standard, the patent-in-suit teaches that additionally IPD (inter-channel phase) data is used for applying “an additional phase shift” to the signals, to “recreate the phase relation between channels of the original signal”. Whereas the matrix elements of the upmix matrix **H** shall no longer just be real-valued, but complex-valued instead, nothing in the patent description indicates that it seeks to redefine the upmix matrix **H** apart from the fact that the conventional, real-valued upmix matrix **H** is computed first, and later turned complex, e.g., by multiplication with an exponential phase term.

129 As a result, the *information* describing the upmix parameters obtained by the parameter interpolator can be real-valued, specifically in the form of real-valued magnitude values and real-valued phase values, which together represent complex-valued parameters. This is described in more detail in paras [0051] to [0053]. Para. [0051] discloses that the upmix parameter determinator 252 is configured to describe the upmix parameters in the form of a magnitude value and a separate phase value, where the magnitude value may for example represent an absolute value of a complex number, and the phase value may represent an angle value of the complex number. The upmix parameter determinator

then may provide a sequence 254 of magnitude values of upmix parameters and a sequence 256 of phase values of upmix parameters, para. [0052]. The parameter interpolator 260 itself is configured to receive the sequence 254 of (real-valued) magnitude values of upmix parameters (or matrix elements) and the sequence 256 of (real-valued) phase values of upmix parameters (or matrix elements), para. [0053]. It is therefore clear that these sequences represent information describing complex-valued upmix parameters. The Court further notes that magnitude “may for example” be – but does not necessarily has to be – an “absolute value”. The patent in suit therefore understands the term “magnitude” broader than the term “absolute value”. This is reflected in the claim wording as stated above, according to which the interpolator obtains temporally interpolated upmix parameters merely on the basis of “an information describing” first and second complex-valued upmix parameters, and such information describing a complex-valued parameter can, for example, be the real values representing magnitude and/or phase of said complex-valued parameter.

130 The drawings do not indicate a different understanding. Figures 1, 2a and 2b show block schematic diagrams of an apparatus for upmixing a downmix audio signal according to different embodiments:

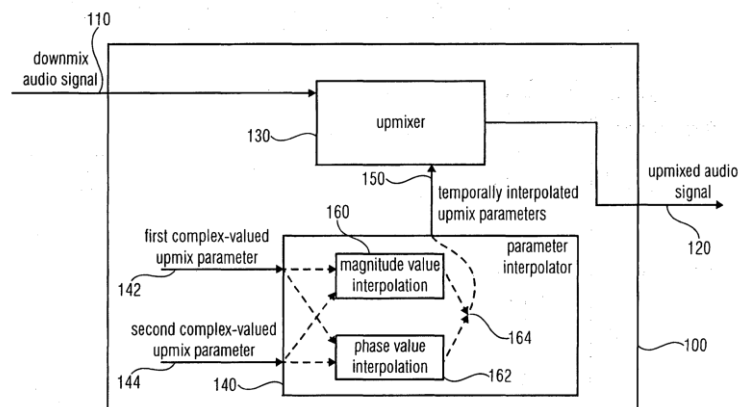


FIG 1

131 Although figure 1 indicates that already the upmix parameters input to the interpolator are complex valued, the patent clearly envisages processing magnitude and/or phase of said complex-valued parameter separately by using real values, which represent these complex-valued parameters. Figures 2a and 2b together with the related description point exactly in this direction:

FIG 2A

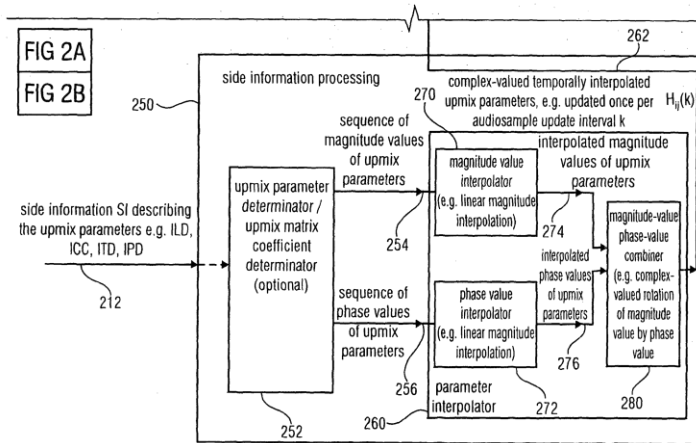
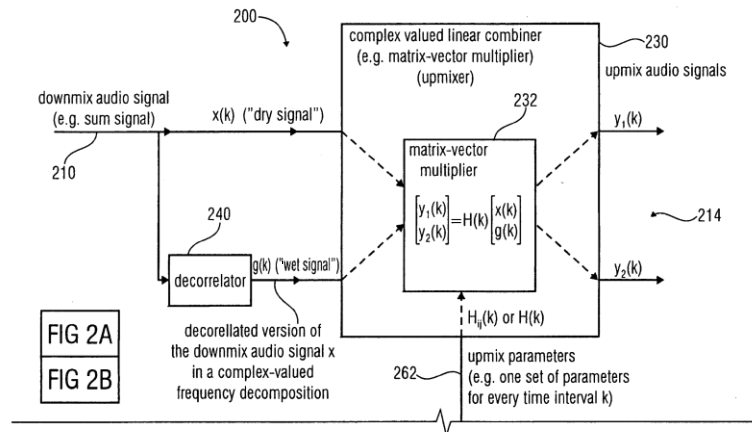


FIG 2B

132 As all three figures show equal embodiments and as the wording of feature 1.2.1 is broad (*one or more temporally interpolated upmix parameters*), the teaching of the patent is not limited to the use of finally constructed complex-valued parameters already when entering into the parameter interpolator.

133 Nothing else can be derived from Defendant's reference to the patent's own systematic. That the patent also uses "information" terminology for side information in the form of spatial cues (e.g., ILD/ICC/IPD; cf. paras. [0027], [0050]), as also shown in dependent claim 8 which explicitly refers to spatial cues (ILD/ICC/ITD/IPD), does not contradict magnitude and phase as values also describing complex-valued upmix parameters. Indeed, in view of figure 2B, the magnitude and phase values of the first/second upmix parameters outputted by the upmix parameter determinant are based on the side information, and the patent indeed suggests that the magnitude and phase values of the upmix-parameters as well as the spatial cues all represent side information describing the upmix parameters.

5. Feature group 1.3

1.3 wherein the parameter interpolator is configured to separately interpolate

1.3.1 (a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

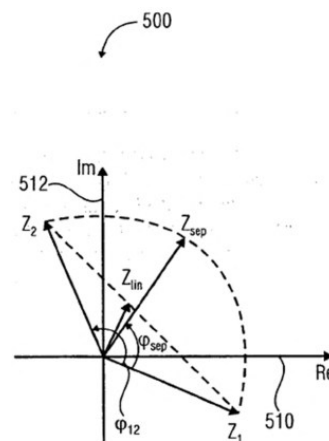
1.3.2 (b) between a phase value of the first complex-valued upmix parameter and a phase value of the second complex-valued upmix parameter,

1.3.3 to obtain the one or more temporally interpolated complex-valued upmix parameters.

134 Feature 1.3 further details the interpolation process. It teaches a separate interpolation between magnitude values and phase values of the first/second complex-valued upmix parameters, respectively. The separate interpolation between the magnitude and the phase is the core of the teaching of the patent.

135 According to these features, the interpolation is performed based on complex-valued parameters. A complex number generally includes a real and an imaginary part. In a complex coordinate system, the real and imaginary parts of a complex number can be represented by coordinates x and y. However, complex numbers are often notated with polar coordinates instead of x-y-coordinates.

136 This is illustrated in figure 5, which shows “a graphical representation 500 of different types of interpolation between two complex values” (par. [0031]):



$$|z_{sep}| = \frac{1}{2} (|z_1| + |z_2|)$$

$$\varphi_{sep} = \frac{1}{2} \varphi_{12}$$

137 This figure shows the complex plane, defined by the real-axis 510 and the imaginary-axis 512. Two complex numbers z1 and z2 – corresponding to two consecutive complex-valued up-conversion parameters – are plotted, and which are to be interpolated. If the

interpolation was not done separately for magnitude and phase but linearly (i.e., by calculation of the average value), this would result in the value $Z_{lin} = 1/2(z_1+z_2)$. However, the magnitude of Z_{lin} is significantly lower than the magnitudes of z_1 or z_2 . This has a detrimental effect on audio signals, causing a noticeable decline in quality at this stage. The teaching of the patent aims at avoiding this result by using a separate interpolation of magnitude and phase values.

138 In view of the question whether a magnitude value can be negative or not, it is rightfully not disputed by the parties that an interpolation as such can be negative to begin with.

139 However, contrary to the Defendant's assumption, the separate interpolation process as taught by the patent does not exclude magnitude values being expressed as or together with negative values or signs, either. This is already understandable to the skilled person as an interpolation, comprising the interpolation of the magnitude, technically does not necessarily have to be carried out in isolation but can in principle be conducted together with other information, such as a negative sign. Indeed, also the patent does not exclude that the input or the result of a separate magnitude interpolation can be expressed or processed together with a negative sign or negative value (a negative sign can be interpreted as a multiplication with -1). Nothing in the claim language does support a limitation that the magnitude or its interpolation must be kept in isolation to negative values per se, but rather that the magnitude is to be interpolated separately from the phase. In this sense, the patent consistently envisages real-numbered values for the magnitudes (e.g., para. [0053] "(real-valued) magnitude values"), wherein per definition real values are in the range from $-\infty$ to ∞ and thus include negative values. In addition, the patent specifically also envisages the entries of the upmix-parameter matrix to be real-valued, e.g. para. [0080] "real-valued matrix elements" and para. [0081] " H_{xx} , real designates a real-valued matrix coefficient, i.e. a magnitude value". Ultimately, a negative real value always comprises a magnitude. Therefore, the conclusion of the Defendant that a negative value is incompatible with a magnitude, is flawed. The Court also notes that the skilled person, particularly in the area of audio signal processing, is aware that magnitudes are often expressed on logarithmic scales, e.g. decibel scales, which can extend to the negative. The patent does not exclude usage of such scales for expressing magnitude, either.

140 Fig. 5, on which the Defendant bases its assumption on, shows a graphical representation of 500 of different types of interpolation between two complex values, para. [0071]. It serves to explain some underlying thoughts of the invention and, more specifically, illustrates the difference between a linear interpolation between generic complex numbers as compared to a separate interpolation between generic complex numbers.

141 The teaching of the patent aims at an improvement of the known upmixing as per the MPEG Surround standard ("MPS"), see [0003], [0006], [0035]. Hence, the skilled person would generally understand the term "magnitude" in the same sense as in the MPS. It is undisputed that the conventional upmix matrix $\mathbf{H}$ in the MPS can in principle take negative values. The same applies to the claimed magnitude, as they are "real-valued",

i.e., they reach from $-\infty$ to ∞ and thus by definition include negative values, as explained above.

5. Features of claim 14

142 The interpretation laid out above applies correspondingly to the method claim 14.

F. VALIDITY

143 The Defendant attacks claim 1 as not being novel with respect to HLCC 7 or at least not being inventive. Further inventive step attacks are based on HLCC 8 (MPEG Surround) in combination with HLCC 9 and 10, and in addition based on HLCC 11. Lack of patentability is also argued with respect to independent claims 14 and 15 and all dependent claims 2 to 13.

144 The validity attacks introduced by the Defendant with its counterclaim for revocation are however not successful.

I. LACK OF NOVELTY OVER HLCC 7 (US 2008/0031463 A1)

145 US 2008/0031463 A1 was published on 7 February 2008, i.e., before the earliest priority date of the patent (28 January 2009).

146 HLCC 7 relates generally to audio signal processing. More particularly, aspects of the disclosure relate to an encoder (or encoding process), a decoder (or decoding processes), and to an encode/decode system (or encoding/ decoding process) for audio signals with a very low bit rate in which a plurality of audio channels is represented by a composite monophonic ('mono') audio channel and auxiliary ('sidechain') information.

147 HLCC 7 addresses improvements upon the "coupling techniques of the AC-3 encoding and decoding system and also upon other techniques in which multiple channels of audio are combined either to a monophonic composite signal or to multiple channels of audio along with related auxiliary information and from which multiple channels of audio are reconstructed. It also addresses improvements upon techniques for downmixing multiple audio channels to a monophonic audio signal or to multiple audio channels and for decorrelating multiple audio channels derived from a monophonic audio channel or from multiple audio channels, para. [0004].

148 Claim 1 of the patent in suit is novel with respect to HLCC 7 as the latter does not disclose feature group 1.2 and especially not feature group 1.3.

1. Feature group 1.2

149 Feature 1.2.2 is not clearly and unambiguously disclosed in HLCC 7.

150 According to feature 1.2.2 of claim 1 of the patent in suit an interpolation between a first and a subsequent second upmix parameter is required when taking into account feature group 1.3. The interpolation claimed by the patent in suit is designed to fill (temporal) gaps between two parameter sets transmitted at discrete points in time (see paras. [0008] - [0009], and fig. 3 of the patent in suit). The objective of HLCC 7, however, is not

to generate additional upmix parameters to fill the gaps existing in time, but to smoothen the magnitude linearly across frequency and spread the parameter over the one frame, see para. [0064] table 2. HLCC 7 discloses an encoder which uses various techniques to smoothen the signal. It teaches the encoding part of an audio signal into a downmix signal plus saving information for a later decoding of the upmix signal, as seen in para. [0244 ff].

151 Temporally subsequent upmix parameters are not interpolated in the decoder of HLCC 7. To the contrary, the decoder may use “look-up tables” as shown in paras. [0039], [0066], [0246]. The teaching of HLCC 7 is with respect to all relevant decoder steps limited to the mere distribution of a single value across blocks or bins. The decoding process which is relevant for features 1.2 and 1.3 of the patent is dealt with in the decoding section of HLCC 7 (paras. [0244] - [0306]) describing Decoder Steps 501–512. The interpolation referenced in Step 506 expressly refers exclusively to interpolation across frequency, referencing Encoder Step 418:

“[0274] Bin angles may be derived from subband angles by linear interpolation across frequency as described above in connection with encoder Step 418.”

152 Para. [0213] defines the character of HLCC 7’s “interpolation” across frequency, in a way that the two neighbouring end bins of two respective subsequent subbands match:

“[0213] Linear interpolation spreads the phase angle change over all the bins in the subband, minimizing the change between any pair of bins, so that, for example, the angle at the low end of a subband mates with the angle at the high end of the subband below it.”

[0214] For example, suppose that the lowest coupled Subband has one bin and a Subband angle of 20 degrees, the next subband has three bins and a subband angle of 40 degrees, and the third subband has five bins and a subband angle of 100 degrees. With no interpolation, assume that the first bin (one subband) is shifted by an angle of 20 degrees, the next three bins (another subband) are shifted by an angle of 40 degrees and the next five bins (a further subband) are shifted by an angle of 100 degrees. [..]

153 Sections [0213] and [0214] suggest a linear interpolation across frequency for minimizing the phase angle change of neighbouring bins, so that, for example, the angle at the low end of a Subband mates with the angle at the high end of the Subband below it, while maintaining the overall average the same as the given calculated Subband angle. By contrast, the interpolation across time of the patent in suit serves to fill temporal gaps between temporally *consecutive* parameter sets, i.e. operating in the time dimension between two points in time, starting from consecutive parameter sets at different points in time, and resulting in a sequence of temporally consecutive parameters having increased time resolution. The understanding of the skilled person of HLCC 7 is different from that. He/She understands that the purpose of “interpolation” across frequency in HLCC 7 is to smoothen subband values down to bin level, operating in the frequency

dimension within a single point in time, starting from adjacent subbands of the same parameter set, and resulting in a smoother frequency distribution (see Table 2, HLCC 7). The skilled person has no reason to assume that without any direct and unambiguous disclosure, the decoding process might entail a magnitude interpolation *over time* and would lead to the *creation* of upmix parameters to fill gaps existing in time in the information stream.

2. Feature group 1.3

154 Also feature group 1.3 is not clearly and unambiguously disclosed in HLCC 7.

155 While HLCC 7 also addresses interpolation of sidechain information over time, comprising an interpolation of temporally variable upmix parameters in its para [0071],

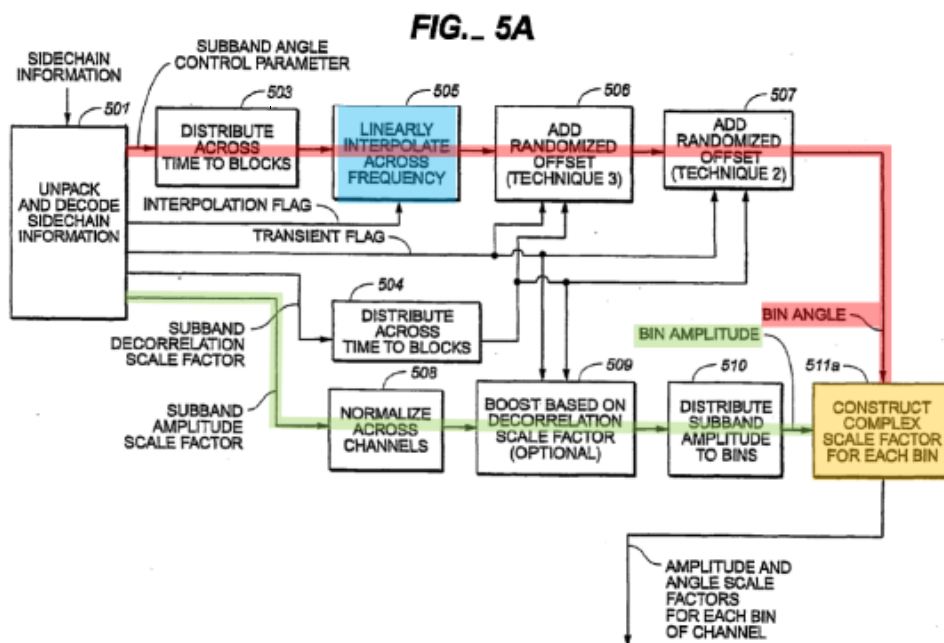
[0071] Whether sidechain information is sent on a frame by-frame basis or more frequently, it may be useful to interpolate sidechain values across the blocks in a frame. Linear interpolation over time may be employed in the manner of the linear interpolation across frequency, as described below.

156 This, by reference to the frequency interpolation, solely corresponds to a spreading or smoothing of a single value and not to an “interpolation” between two consecutive complex values, e.g., between magnitude and phase of a start value (first upmix parameter) and magnitude and phase of an end value (second upmix parameter). The actual “interpolation” in HLCC 7 is of a different nature as the interpolation mentioned in para. [0071] is expressly limited to the *distribution* of values within a single frame, and not across frame boundaries. An interpolation between parameter values from different, temporally subsequent frames is not encompassed by para. [0071], either. Even if sidechain information is transmitted on a frame-by-frame basis, para. [0071] does not contemplate an interpolation between the value of one frame and the value of a subsequent frame. HLCC 7 generally discloses that sidechain information can be interpolated across frequency and time in various ways in the sense of smoothing, but there is no direct and unambiguous disclosure for the exact complementary interpolation according to feature group 1.3, i.e. that magnitude *and* phase, being associated to the *same pair* of upmix parameters, are interpolated between this pair separately.

157 While it is stated in HLCC 7 that it is useful in the upmixing process to interpolate side chain information, the teaching of HLCC 7 remains limited to a smoothing-type linear interpolation. It proposes the use of sidechain information, which is intended to assist the decoder in obtaining an (upmix) audio signal from the downmix audio signal, which is as similar as possible to the original audio signal. The skilled person understands from para. [0071] that interpolation may be performed not only across frequency but also temporally, but that the interpolation still remains limited to a temporal smoothing of the magnitude, which is a spreading of the parameter over the one frame. HLCC 7 proposes “interpolating” – or rather smoothing – the one received “Subband Angle Control Parameter” over the bins of a subband, either in frequency or in time. That is, if the “Sub-band Angle Control Parameter” has a certain value (indicating a desired phase rotation for the entire frame) the first bin of the subband may be rotated by a fraction of

that rotation, as well as the second bin, and so on. In HLCC 7, sidechain information, in particular the Subband Angle Control parameters may be interpolated linearly, but there is no disclosure of an interpolation between a first and a subsequent second upmix parameter both with respect to magnitude and phase.

158 Nothing else can be derived from figure 5A:



159 This also shows only a distribution of subband angle control parameters across blocks and a linear interpolation across frequency. Given the objective of HLCC 7, this is consistent as the purpose of “interpolation” across frequency is to smoothen subband values down to bin level, operating in the frequency dimension within a single point in time, starting from adjacent subbands of the same parameter set, and resulting in a smoother frequency distribution (see Table 2, HLCC 7).

II. INVENTIVE STEP WITH RESPECT TO HLCC 7

1. Standard

160 The CoA has already established the principles on the approach taken to examine inventive step in the cases UPC_CoA_528/2024 and UPC_CoA_529/2024 (25 November 2025, Amgen v Sanofi/Regeneron, see also UPC_CoA_646/2024, 25 November 2025, Meril v Edwards), and confirmed this approach in case UPC_CoA_901/2025 (17 April 2026 – Abbott Diabetes Care v Sinocare, mn. 90 ff.). According to this, in a first step the object of the invention (the objective problem) must be established. This must be assessed from the perspective of the skilled person with its common general knowledge at the application or priority date of the patent. In this assessment, it should be established 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 the 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. 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 (UPC_CoA_901/2025, 17 April 2026 – Abbott Diabetes Care v Sinocare, mn. 91).

161 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 (UPC_CoA_901/2025, 17 April 2026 – Abbott Diabetes Care v Sinocare, mn. 92).

2. Present case

162 The document HLCC7 does not contain a pointer for the skilled person to perform interpolation of scale factors bins (angle and amplitude) based on the same pair of temporally adjacent scale factor bins and to arrive at the subject-matter of claim 1.

163 The patent in suit sets as its objective that there is a need for an improved concept of upmixing a downmix audio signal into an upmixed audio signal, which reduces a degradation of the hearing impression if the update frequency of the side information is smaller than the update frequency of the downmix audio signal, para. [0016]. This means that the interpolation across time of the patent in suit serves to fill “temporal gaps” between consecutive parameter sets, operating in the time dimension between two points in time, starting from consecutive parameter sets at different points in time, and resulting in a sequence of consecutive parameters with intermediate parameters serving an increased time resolution, which according to the patent allows the parameters to be applied more continuously over time in a gapless manner, para. [0009].

164 As already laid out above, the teaching of HLCC 7 aims at a different purpose. Its “interpolation” across frequency serves the purpose to smoothen subband values down to bin level, operating in the frequency dimension within a single point in time, starting from adjacent subbands of the same parameter set, and resulting in a smoother frequency distribution (see Table 2, HLCC 7). It shows only a distribution of subband angle control parameters across blocks and a linear interpolation across frequency.

165 The skilled person does not retrieve a pointer from para. [0071] of HLCC 7, either. As, the “interpolation” in HLCC 7 is of a different nature the skilled person sees the disclosure in para. [0071] being limited to the *distribution* of values within a single frame, and not across frame boundaries. Thus, an interpolation between parameter values from different, temporally subsequent frames is not encompassed by para. [0071]. The solution of the patent in suit is to the contrary more complex than interpolating on the level of subband resolution as proposed in HLCC7, e.g. by generating an interpolation function on the basis of the subband scale factors.

166 And even if sidechain information is transmitted on a frame-by-frame basis, para. [0071] does not give the skilled person an incentive to contemplate an interpolation between the value of one frame and the value of a subsequent frame. The document HLCC 7 as a whole does even teach away from the interpolation of the amplitude between subbands, as indicated in para [0215]:

[0215] Optionally, changes in amplitude from subband to subband, in connection with this and other steps described herein, such as Step 417 may also be treated in a similar interpolative fashion. However, it may not be necessary to do so because there tends to be more natural continuity in amplitude from one subband to the next.

167 This passage shows the skilled person that changes in amplitude from subband to subband may even not be necessary because there tends to be more natural continuity in amplitude from one subband to the next. This discourages the skilled person from contemplating changes in amplitude from subband to subband in the first place. It has to be borne in mind that 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 (UPC_CoA_901/2025, 17 April 2026 – Abbott Diabetes Care v Sinocare, mn. 93). To perform interpolation of scale factors bins (angle and amplitude) based on the same pair of temporally adjacent scale factor bins and to arrive at the subject-matter of claim 1 does in fact require inventive skills when starting from HLCC 7.

III. INVENTIVE STEP WITH RESPECT TO HLCC 8 (MPEG SURROUND)

168 The parties rightfully agree that HLCC 8 can be a realistic starting point for the skilled person in order to solve the objective problem. That is because HLCC 8 describes the MPEG Surround standard ISO/IEC 23003-1:2007(E), which is the basis for the technology addressed by the patent in suit. HLCC 8 was published on 15 February 2007 i.e., before the earliest priority date of the patent (28 January 2009). The patent in suit explicitly refers to the “MPEG Surround” when describing the background of the invention. The parties rightfully acknowledge that the distinguishing feature between HLCC 8 and claim 1 is the separate interpolation of the phase value and the magnitude value of the upmix parameter instead of the magnitude interpolation only.

169 However, neither HLCC 9, nor HLCC 10, nor HLCC 11 provide an incentive for the skilled person to further develop the MPEG Surround in the direction of claim 1 of the patent in suit.

1. Combination with HLCC 9

170 JPH01205200A (new translation in Exhibit HLCC 9b) was published on 17 August 1989, i.e., decades before the earliest priority date of the patent (28 January 2009). HLCC 9 relates to a speech coding scheme in which a speech signal is transformed into the frequency domain, and the transformation coefficients are divided into an amplitude component and a phase 10 component and are coded. Hence, it deals with voice coding,

which comprises converting a voice signal into the frequency domain and *encoding* the converted spectrum as a transmission parameter.

171 HLCC 9 criticizes over the prior art (p. 3, lines 35 ff):

“However, with this scheme, since the extracted peak values are discrete values, and the spectral peaks (harmonic components) are not accurately detected, speech features are not sufficiently extracted, leading to degradation of the coded speech, and in addition, since the three parameters of frequency position, amplitude, and phase are quantized simultaneously, quantization errors occur in each parameter, causing 5 mismatches in the amplitude and phase relative to frequency position, resulting in a degradation of the coding quality.

172 HLCC 9 proposes as means for solving the problem a quadratic interpolation of three points including the peak point of the amplitude and two points on both sides thereof (p. 4 lines 9 ff):

To solve the above problems, in the present 10 invention, after the peaks of the amplitude component have been extracted, quadratic interpolation of each peak is performed using three points including the peak point of the extracted amplitude component and two points on both sides thereof, for example, to 15 specifically define each actual peak, and to determine the frequency at the position of the peak.

173 This section merely discloses that, in a converted audio signal (i.e., converted into the frequency domain, e.g. by a Fourier transformation), the amplitude of the acoustic wave at the position of a peak can be determined by interpolation between neighbouring amplitude values in the frequency spectrum. Similarly, the phase of the acoustic wave at the position of the peak can be determined by interpolation between neighbouring phase values in the frequency spectrum. However, both amplitude and phase relate to (simple) properties of the acoustic wave – and not to upmix parameters, let alone complex-valued upmix parameters.

174 Contrary to the Defendant, despite the fact that the separate processing/interpolation of magnitude and phase of a complex value might be generally known to be advantageous, there is no reason in HLCC 8 for the skilled person to search for the patented solution by combining it with HLCC 9. This is already because, HLCC 9 does not disclose parameter interpolation, but rather amplitude or coefficient interpolation in the context of determining a frequency peak in the signal spectrum. In particular, it does not address upmix-parameter interpolation in the context of down- and upmixing based on complex-valued parameters to close gaps in the time domain. The “interpolation” in HLCC 9 is used in the spectral domain to determine a spectral peak with greater accuracy. This is a completely different form of interpolation with respect to the patent in suit. The interpolation disclosed in HLCC 9 operates on the amplitude and phase of sinusoidal components of the audio waveform, i.e., on intrinsic physical properties of the signal itself.

175 By contrast, the interpolation in HLCC 8 (and in claim 1 of the patent-in-suit) operates on upmix parameters, i.e., on spatial parameters that describe a specific relationship between multiple audio channels. These upmix parameters are not intrinsic physical properties of an audio waveform but mathematical quantities derived from spatial cues such as Channel Level Difference (CLD) and Inter-Channel Coherence (ICC) through complex trigonometric calculations. This is not dealt with in HLCC 9. It does not teach the skilled person to apply temporal interpolation for subsequent upmixing parameters separately for amplitude and phase, let out particularly at the decoding step.

2. Combination with HLCC 10

176 HLCC 10 is an article titled “Speech Analysis/Synthesis Based on a Sinusoidal Representation” by McAulay and Quatieri” from 1986. It concerns the analysis and synthesis of audio signals using sinusoidal decomposition.

177 Considering the objective of the patent being related to update frequency of the side information, the skilled person would not have consulted HLCC 10 to arrive at the patented solution in combination with HLCC 8. That is because, the interpolation disclosed in HLCC 10 relates to the sinusoidal components of the audio waveform itself, in particular the magnitude of synthetic acoustic waves, and not to side information, i.e. upmix parameters.

178 The amplitude and phase of a sinusoidal audio component are physically observable properties of the waveform. The coefficients of a mixing matrix derived from CLD and ICC parameters are mathematically derived constructs. HLCC 10 does not address upmix parameters, let alone complex-valued upmix parameters that are to be temporally interpolated.

179 The statement on its page 752,

Although the sinusoidal model was originally designed for a single speaker, it can represent any waveform consisting of a sum of sine waves with time-varying amplitudes and frequencies. Thus, the analysis/synthesis system should be capable of synthesizing a broader class of signals.

does not relate to other parameters as taught by the patent in suit, but to other forms of sound, like *speech in a musical background, and marine biologic signals such as whale sounds*. Hence, HLCC 10 does neither deal with the interpolation of upmix parameters, nor a separate interpolation of phase and/or magnitude of a complex-valued upmix parameter.

IV. INVENTIVE STEP BASED ON HLCC 11

180 Finally, also HLCC 11 does not provide sufficient basis to arrive at the claimed solution in combination with common general knowledge or HLCC 9 or HLCC 10.

181 The document “Background, Concept, and Architecture for the Recent MPEG Surround Standard on Multichannel Audio Compression” by Jeroen Breetbaart et al. (Exhibit HLCC 11) was published on 1 May 2007, i.e., before the earliest priority date of the patent (28

January 2009). It was considered in the International Search Report (ISR) relevant in examination proceedings prior to the grant of the patent in suit.

182 HLCC 11 discloses separate interpolation for real and imaginary part, which is, however, distinct from separate interpolation for magnitude and phase, as described in the patent. HLCC 11's concept of "individual interpolation" of real part (i.e. a) and imaginary part (i.e., b) is not a "separate" interpolation in the sense of feature 1.3 of the patent in suit, but simply the standard, linear interpolation of a complete complex number, which is shown in (as z_{lin}) in Fig. 5 of the patent in suit. This is – undisputedly – the solution in the prior art which was seen as disadvantageous by the inventor of the patent in suit, because the amplitude varies strongly based on the phase. Hence, HLCC 11 does not provide a pointer for the skilled person to further develop the MPEG Surround in the direction of the claimed solution of claim 1.

183 Contrary to the Defendant's argument, the skilled person has no reason starting from HLCC 11 when trying to solve the objective technical problem of reducing the decrease in audio quality (caused by interpolation), to consider HLCC 9 or HLCC 10 because the disadvantages of HLCC 11 would be apparent for the skilled person. There is no pointer in HLCC 11 in the first place to consider to replace real and imaginary part by magnitude and phase without specific prompt, not even when considering the teachings of HLCC 9 or HLCC 10, which as stated above themselves do not provide a teaching in the direction of the claimed. To avoid repetition reference can be made to the sections above (III. 1. and 2.).

V. CLAIM 14 AND 15 AND DEPENDENT CLAIMS

184 As the subject matter of claims 14 and 15 corresponds to the subject matter of claim 1, the same arguments regarding patentability of the subject matter of claim 1 apply correspondingly.

185 The same is true for the subject matter of dependent claims 2-13.

VI. AUXILIARY REQUESTS

186 The conditions to examine the auxiliary requests under R. 30.1 lit. c) RoP are not met, thus no discussion of their subject is necessary.

G. INFRINGEMENT

187 The attacked embodiments infringe claim 1 and 14 of the patent in suit.

I. ATTACKED EMBODIMENTS

188 Claimant directs this action against all devices, in particular smartphones and tablets, that use Android OS version 9 or later and that are manufactured and/or marketed by the defendant under the Nokia and/or HMD brand, for example, but not limited to, HMD smartphones such as the 'HMD Pulse' or 'HMD Arc', the HMD tablet 'HMD T21', as well as Nokia smartphones such as the 'Nokia C32', 'Nokia G22' and Nokia tablets such as the 'Nokia T20', etc.

II. THE USAC STANDARD

189 The patent in suit is assessed in view of the MPEG-4 Part 3 – Audio standard, as published under ISO/IEC 14496-3. Part of this standard is the family of AAC technologies (‘Advanced Audio Coding’, also known as the ‘AAC standard’), which describe the encoding and compression of digital audio data. The most recent of these technologies is the so-called USAC standard (‘Unified Speech and Audio Codec’, also known as xHE-AAC or ‘Extended HE-AAC’). In accordance with Section 1.5.1.2.40 of the MPEG-4 Audio Standard, Amendment 3, the USAC object type carries the ‘Unified Speech and Audio Coding payload (see ISO/IEC 23003-3)’ within the MPEG-4 audio framework. Since the third amendment, the USAC standard has therefore been an integral part of the MPEG-4 standards, and support for the USAC object type is a normative requirement (exhibit BP-T 5).

III. CLAIM 1

190 Infringement of claim 1 follows the fact that Android OS version 9 necessarily requires AAC and in particular the USAC standard, as the USAC is part of MPEG-4 Part 3 - Audio, as published under ISO/IEC 14496-3, making use of claim 1 of the patent in suit. Whereas, the realization of features 1. – 1.2.2 are rightfully undisputed, the USAC and thus the attacked embodiments also necessarily make use of features 1.3.1 and 1.3.2:

1.3 wherein the parameter interpolator is configured to separately interpolate

1.3.1 (a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

1.3.2 (b) between a phase value of the first complex-valued upmix parameter and a phase value of the second complex-valued upmix parameter,

1.3.3 to obtain the one or more temporally interpolated complex-valued upmix parameters.

191 As laid out above, feature group 1.3 addresses the actual interpolation process based on a separate interpolation between respective magnitude values and a phase values of the first/second complex-valued upmix parameters. This means that a respective parameter is a complex value comprising a magnitude and a phase. However, this does not require that the input into the interpolation (the interpolator) comprises complex-valued upmix parameters. According to feature group 1.3 the interpolator itself can also *receive*(real-valued) magnitude values of upmix parameters and then *provide* a sequence of complex-valued, temporally interpolated upmix parameters by the parameter interpolator, while the actual interpolation is conducted with complex-valued parameters according to feature group 1.3. The upmix parameter determinator, which is the step before, can use real-valued numbers. As the interpolator merely obtains temporally interpolated upmix parameters on the basis of “an information describing” first and second complex-valued

upmix parameters, such information describing a complex-valued parameter can, for example, be the magnitude and/or phase of said complex-valued parameter.

192 This is the exact interpolation used by the USAC, where the interpolator is fed with real-valued parameters and elements, and where complex-valued parameters are obtained by the parameter interpolator from the interpolation process.

193 The USAC standard also realizes the temporal interpolation of the complex-valued up-mixing parameters separately for magnitude and phase.

194 The mono to stereo upmixing is described in section 7.11 of the USAC standard. Figure 20 of the USAC standard (page 167 Exhibit BP-T 5) shows that a mono signal (“M0”) is fed into, among other things, a “mix matrix [M2]”. The mix-matrix M2 upmixes the mono signal and outputs two signals: “Left” and “Right”:

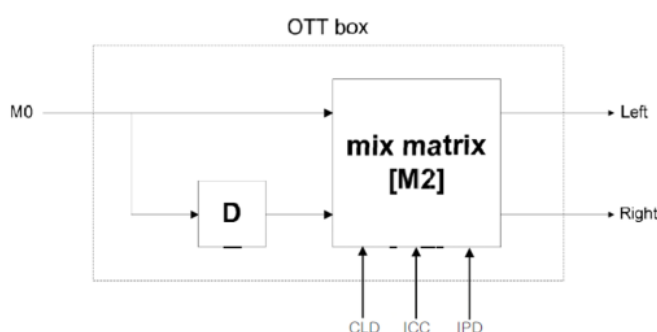


Figure 20 — OTT decoding block: two output signals with the correct spatial cues are generated by mixing a mono input signal M0 with the output of a decorrelator D that is fed with that mono input signal

195 The mix-matrix M2 uses the parameters CLD, ICC and IPD for upmixing. Section 7.11.2.3.1 of the USAC standard describes that the calculation of the mix-matrix M2 is done according to section 6.5 of the MPS standard, but with the modifications described in section 7.11.2.3.2 of the USAC standard. If IPD parameters are available, the mix-matrix M2 is modified for phase synthesis (page 172 Exhibit BP-T 5):

7.11.2.3 Calculation of pre-matrix M1 and mix-matrix M2

7.11.2.3.1 General

The calculation of pre-matrix M1 and mix-matrix M2, which are interpolated versions of $R_1^{l,m} G_1^{l,m} H^{l,m}$ and $R_2^{l,m}$, is done according to ISO/IEC 23003-1:2007, 6.5, but with the modifications described in the following section. In case that IPD parameters are available, mix-matrix M2 is modified for phase synthesis.

196 In accordance with the MPS standard, the (unmodified) mixing matrix M2 is defined for each time slot n and each (hybrid) subband k (section 6.5.1. of MPEG standard, exhibit BP-T 6, p. 109):

6.5 Calculation of pre-matrix M1, mix-matrix M2 and post-matrix M3

6.5.1 Introduction

In the following subclauses, the matrices $\mathbf{M}_1^{n,k}$ and $\mathbf{M}_2^{n,k}$ are defined for every time-slot n , and every hybrid subband k . They are interpolated versions of $\mathbf{R}_1^{l,m} \mathbf{G}_1^{l,m} \mathbf{H}^{l,m}$ and $\mathbf{R}_2^{l,m}$ which are defined for a given parameter time-slot l , and a given processing band m , based on the CLD and ICC and CPC parameters valid for that parameter time-slot and processing band. Hence, the matrices are frequency dependent and $\mathbf{R}_1^{l,m} \mathbf{G}_1^{l,m} \mathbf{H}^{l,m}$ and $\mathbf{R}_2^{l,m}$ are calculated for every processing band, and subsequently mapped to every hybrid band.

197

The modification of the mixing matrix M2 for phase synthesis is then carried out, provided that IPD parameters are available, by extending their elements

$M_{ij}^{n,k}$ by interpolated phase correction angles $\bar{\theta}_1^{n,\kappa(k)}$ and $\bar{\theta}_2^{n,\kappa(k)}$.

198 The calculation of the time-interpolated elements of the unmodified mixing matrix is carried out independently of that of the interpolated phase correction angles, and vice versa. Only at the very end are these separately interpolated values combined to obtain complex-valued up-conversion parameters. The phase synthesis is applied by modifying the mix-matrix M2 as follows:

$$\tilde{\mathbf{M}}_2^{n,k} = \begin{bmatrix} e^{j\bar{\theta}_1^{n,\kappa(k)}} & 0 \\ 0 & e^{j\bar{\theta}_2^{n,\kappa(k)}} \end{bmatrix} \begin{bmatrix} M_{11}^{n,k} & M_{12}^{n,k} \\ M_{21}^{n,k} & M_{22}^{n,k} \end{bmatrix}$$

199 Hence, the structure of the resulting matrix shows the distinction between phase and magnitude components. The Defendant's argument that complex-valued parameters "appear" only after real-valued numbers have been processed, is not convincing in light of this matrix. The structure of the resulting matrix, while showing a distinction between phase and magnitude components, also shows that phase and magnitude both represent components of the same complex-valued parameter.

200 The same applies to the Defendant's argument that the alleged magnitude interpolation described in the MPS standard – namely the mix-matrix M2, which represents an interpolation of the W2 matrix based on the R2 matrix – may lead to negative values. To the contrary, it is shown that the matrix installed by the USAC standard makes use of a separate interpolation of phase and magnitude components. The Defendant's assumption to deduce from the possibility of negative values, that the interpolation is not done separately, is without merit. It is undisputed that M2 depends on W2. The matrix W2 is interpolated. W2 is either derived from R2 or may be identical to it. As R2 may have negative entries, the result of the W2 interpolation (i.e., the mix-matrix M2) can also be negative. A negative interpolation result can be achieved by a separate phase interpolation or by a combined interpolation. But the patented claim does not exclude that a magnitude interpolation can lead to negative results, as well. The fact that a negative interpolation result might be possible does not indicate that the interpolation is

not separate with respect to magnitude and phase, but rather that at least one of the values between which it is interpolated in the USAC standard is negative, feature 1.3.

IV. CLAIM 14

201 The attacked embodiments also apply a method according to claim 14. They in particular make use of feature group 14.2 and feature 14.3:

14.2 wherein the interpolation is performed separately

14.2.1 (a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

14.2.2 (b) between a phase value of the first complex-valued upmix parameter and a phase value of the second complex-valued upmix parameter; and

14.3 applying the interpolated complex-valued upmix parameters to upmix the downmix audio signal, in order to obtain the upmixed audio signal.

202 In order to avoid repetition reference is made to the discussion regarding claim 1.

H. EXHAUSTION DEFENCE

█ Claimant's patent rights are not subject to exhaustion. Defendant's argumentation is without merit as neither the Operating System Android nor the FDK Codec is a █ under the █ (see below under I.). The bilateral license agreement between █ does not include patent rights in the first place and thus cannot lead to exhaustion (see below under II.).

I. █

█ The █ does neither cover third party products as the Defendant's nor is the Operation System Android nor the FDK Codes itself a █ under this agreement.

1. Legal background

205 According to Art. 29 UPCA shall the rights conferred by a European patent not extend to acts concerning a product covered by that patent after that product has been placed on the market in the European Union by, or with the consent of, the patent proprietor, unless there are legitimate grounds for the patent proprietor to oppose further commercialisation of the product. Consequently, where these conditions are met, the right conferred on the patent proprietor by the patent is limited to the territory of the Community. The lawful acquirer of a product placed on the market by the patent holder or with the patent holder's consent is entitled to use it for its intended purpose, to sell it to third parties or to offer it to third parties for one of these purposes (LD Düsseldorf, decision of 22 June 2026 – UPC_CFI_811/2024 - Evac v Shanghai VacDrain, mn. 159). As

the principle of exhaustion is expressly regulated in Article 29 of the UPCA, there is no need to have recourse to the national law of the Member States (LD Munich, decision of 22 August 2025 – UPC_CFI_248/2024 - Brita v Aquashield, mn. 223 f.).

206 The effects of exhaustion initially extend to claims relating to devices. However, according to the wording (“acts relating to a product protected by the patent”), the effects of exhaustion also extend to method claims relating to the handling of a product protected by the patent. This applies both to a product which has been obtained directly through an authorised use of the patented process, and to a product which utilises a process claim, provided that it is also protected by an apparatus claim and has been placed on the market with the consent of the patent holder. Exceptions apply in cases where the patent holder has expressly reserved the right to consent to the use of this process. The patent holder may commercialise his exclusive right only once; subsequent uses of the patent are therefore, in principle, deemed to have been remunerated, unless otherwise agreed. In any event, this is the result where the patent holder has explicitly consented to such acts of use (LD Munich, decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 119 f.).

207 The question of whether consent has been given, in so far as it has been declared within the framework of a contract, is governed by the law applicable to the contract. However, the legal consequences of consent given by the patent proprietor arise from the law of the relevant country of protection — in this case, therefore, from Article 29 UPCA. In order to preserve the marketability of the products concerned, these legal consequences are, in principle, not subject to the principle of party disposition (LD Munich, decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 120).

2. Factual basis

208 [REDACTED]
[REDACTED] it is undisputed that there is a patent licence agreement concluded between [REDACTED] (Exhibit BP 12). The Patent-in-Suit is subject to the license Via has granted to [REDACTED]

209 In its preamble it is stated:

[REDACTED]

210 In the definition section it is amongst others stated:

[REDACTED]

[REDACTED]

[REDACTED]

211 The relevant

[REDACTED]

[REDACTED]

212 With

[REDACTED]

3. Assessment

213 Regardless of the fact, that the applicable law of the contract – both parties reside in the State of Delaware – is not disclosed, the legal consequences of consent given by the patent proprietor arise from the law of the relevant country of protection, which is Art. 29 UPCA. Despite the fact, that the effects of exhaustion under Art. 29 UPCA also extend to method claims relating to the handling of a product protected by the patent, the scope of this agreement does not extend to Defendant’s products and their use of the method protected by the patent.

█ In its preamble it is already stated, that only █ products are subject to the license agreement, as it reads: “█

█

█ This gives an indication that the agreement’s scope is limited to █ as Claimant asserted.

█ According to section 1.2 and 2.1 the subjective scope of the agreement further is limited to █ which Defendant undoubtedly is not, █

█ In addition, █

█ hence Defendant cannot claim that Claimant had consented to a subsequent use of the patent by Defendant.

216 The same is demonstrated by █ own disclaimer on its website. The NOTICE file for the Fraunhofer FDK AAC Codec as hosted on █ own website states:

“Patent licenses for necessary patent claims for the FDK AAC Codec (including those of Fraunhofer) may be obtained through Via Licensing (www.vialicensing.com) or through the respective patent owners individually for the purpose of encoding or decoding bit streams in products that are compliant with the ISO/IEC MPEG audio standards. Please note that most manufacturers of █ devices already license these patent claims through Via Licensing or directly from the patent owners, and therefore FDK AAC Codec software may already be covered under those patent licenses when it is used for those licensed purposes only.”

█ This disclaimer shows █ own understanding of the license agreement it signed with Via, that patent licenses still have to be obtained, which would be entirely

unnecessary if [REDACTED] license had already exhausted the patent rights for all downstream uses – which is excluded by the agreement anyhow.

b) [REDACTED]

[REDACTED] When it comes to Defendant's position that the [REDACTED] itself would be a [REDACTED] this argument is not convincing, either. HMD tries to derive rights from the fact that Fraunhofer "delivers" the [REDACTED] to [REDACTED] and [REDACTED] "delivers" [REDACTED] to smartphone manufacturers. Apart from the fact, that HMD is obviously no beneficiary of the license agreement, neither [REDACTED] nor the [REDACTED] can be considered a [REDACTED]" according to [REDACTED]

[REDACTED] Furthermore, [REDACTED] is no [REDACTED] in this sense as it requires downloading and installing and adjustment to the specifics of the device that necessarily precedes the creation of a [REDACTED] Unlike consumer applications that are designed for immediate installation and use by any end user without technical expertise, [REDACTED] before it can function on a device.

220 While the parties agree that the Fraunhofer FDK AAC Codec, by its very nature a software library, is the [REDACTED]. Here, it is even more evident that the FDK Codec, that is only one of many parts of the Android OS, never represents a ready to use end-user product as it requires integration by a software developer into the Operation System, first. A software library that requires compilation, integration into an operating system, and subsequent installation on hardware before any end user can interact with it, is not an [REDACTED] regardless of its degree of completion. Defendant acquires the Codec as part of [REDACTED] for the express purpose of integrating it into devices that it then sells. This is the opposite of what the "End User" definition requires. The Codec is just a component.

221 Accordingly, Claimant provided sufficient evidence in Exhibit BP 16 (Witness statement H. Jay) that [REDACTED]

marketing statements by [REDACTED] or even by Claimant do obviously not refer to the confidential agreement and the terms and definitions used therein.

II. BILATERAL LICENSE AGREEMENT BETWEEN [REDACTED]

[REDACTED] Defendant's assertion that exhaustion may also result from the bilateral license agreement between the Claimant and [REDACTED] is without merit, as well. The agreement in question is explicitly [REDACTED]

[REDACTED] if the agreement does not relate to patents, no exhaustion can be inferred from it. No evidence to the contrary can be found in the agreement. All assertions by the Defendant to the contrary are without any basis.

J. FRAND DEFENCE

223 Defendant's FRAND defence is unsuccessful. It can be assumed, in favour of the Defendant, that the contested patent is standard-essential for the AAC standard, thus leading to a dominant market position of Claimant (see below under I.). Under European Competition Law the patent holder can, in principle, fulfil its obligations by either offering a pool license or a bilateral license. However, there are constellations where the implementer can demand a bilateral licence instead of a pool licence (see below II.). The Defendant has not proven that such a constellation is given in the present case (see below III.). In addition, Defendant has not demonstrated to be continuously willing to obtain a bilateral licence never coming into possession of sufficient bilateral agreements with the other SEP pool licensors, and despite of that refrained from placing a security for Claimant's potential licence claims.

I. DOMINANT MARKET POSITION

224 According to Art. 20 UPCA the Unified Patent Court applies EU law in its entirety and respects its primacy. EU law is the primary source of law to be applied by the Unified Patent Court, Article 24(1)(a) UPCA. This includes the Treaty on the Functioning of the European Union (TFEU). The decisions of the Court of Justice of the European Union are binding on the Unified Patent Court, Article 21, second sentence, UPCA.

225 Art. 102(1) TFEU prohibits the abuse of a dominant position in the internal market or in a substantial part thereof by one or more companies, insofar as this may affect trade between Member States.

226 As laid out by the ECJ and several Local Divisions of the UPC a dominant position within the meaning of Art. 102 TFEU relates to a position of economic strength which enables a company to prevent the maintenance of effective competition in the relevant market, by giving it the power to behave to an appreciable extent independently of its competitors and customers (ECJ, judgment of 19 April 2012, C-549/10 P, ECLI:EU:C:2012:221, para. 38 - Tomra; see also: LD Munich, UPC_CFI_2/2023, decision of September 19, 2023, p. 93 - 10x Genomics vs. NanoString; LD Düsseldorf, UPC_CFI_135/2024, decision of 18 March 2026, paras. 458 et. seqq. - Dolby vs. Beko; LD Mannheim, Decision of 16 June 2026 – UPC_CFI_86/2025 – InterDigital v The Walt Disney Company et al, mn. 207 ff.). The relevant market must first be defined in terms of product scope and geographic scope before it can be determined whether a company holds a dominant position in that market (cf. LD Munich, UPC_CFI_2/2023, decision of September 19, 2023, p. 93 et seq. - 10x Genomics vs. NanoString). The definition of a relevant product market generally follows the demand-side market concept, i.e. assessing the substitutability of products from the perspective of the customer. Accordingly, the relevant product market comprises all products or services that, due to their characteristics, are particularly suited to satisfying

a consistent demand and are only to a limited extent interchangeable with other products or services (cf. ECJ, judgment of 26 November 1998, C-7/97, ECLI:EU:C:1998:569, para. 33 - Oscar Bronner). The relevant geographic market comprises the area in which the concerned companies are involved in the supply and demand of products or services, in which the conditions of competition are sufficiently homogenous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas (cf. Commission Notice on the definition of the relevant market for the purposes of Union competition law (C/2024/1645), para. 38).

227 In the present case it can be assumed, in favour of the Defendant, that the contested patent is standard-essential for the AAC standard. The Claimant has not disputed this assumption and referred to the fact that at least one patent from each patent family licensed through the Via AAC patent pool has been classified by independent experts as ‘essential’ to the AAC standard.

II. PRINCIPLES

228 In the case Huawei/ZTE the ECJ established a framework for licence negotiations that is binding on the courts of the Member States.

1. Interplay of reciprocal obligations under the Huawei/ZTE framework

229 The Local Division Hamburg agrees with the general classification of the programme of proceedings following Huawei v ZTE by the Local Divisions Mannheim (decision of 22 November 2024 – UPC_CFI_210/2023 – Panasonic v OPPO, mn. 191 ff.; Decision of 16 June 2026 – UPC_CFI_86/2025 – InterDigital v The Walt Disney Company et al, mn. 223 ff.), Munich (decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 129 ff.) and Düsseldorf (UPC_CFI_135/2024, decision of 18 March 2026, - Dolby vs. Beko, mn. 472),

which is as follows:

230 The ECJ’s negotiation framework is not focused solely on determining the respective licensing terms, which would be stripped of an assessment of the respective conduct of the parties during the negotiations. Rather, the central concern of Huawei/ZTE is to establish a negotiation framework with reciprocal obligations that simultaneously serves to assess the question of primary EU law as to whether the enforcement of the patent holder’s rights of injunctive relief, recall and removal is subject to antitrust restrictions. The determination of a FRAND licence rate, if any, is merely one component of this framework. An assessment of the terms of a FRAND licence that disregards the steps established by the ECJ —in the sense of determining the licence fee on purely economic grounds without taking into account the relevant conduct of the parties involved in the negotiations— does not comply with Union law and would therefore violate mandatory law in the Member States.

231 According to the ECJ, before filing an action for an injunction, the SEP holder must first notify (“alert”) the patent user of the alleged patent infringement. In doing so, the holder

must identify the patent in question and specify how it is alleged to have been infringed (ECJ, loc. cit., para. 61, para. 71). In a subsequent step—also prior to filing a lawsuit—the patent user must then initially express its willingness to enter into a licence agreement on FRAND terms (ECJ, loc. cit., para. 63, para. 71). It must not be limited to mere “lip service”, but must be sincere so that it can serve as a basis for further negotiations.

232 However, simply examining the initial statement is generally insufficient when determining whether the implementer is seriously interested in obtaining a licence. A statement to this effect is not, in and of itself, sufficient to determine whether the implementer in question is genuinely serious about it. In this regard, the implementer’s conduct throughout the negotiations must always be considered in its entirety. On the other hand, the assessment of FRAND-compliant conduct must not focus solely on the implementer’s willingness to take a licence, in the sense of analysing only its conduct. Therefore, it is incorrect to assess “willingness to licence” solely based on the patent user’s counteroffer, if any, and by using that counteroffer as an indication for or against the seriousness of the user’s conduct without first considering the SEP holder’s offer. Under such an understanding, there would be a significant risk that the required examination of the offer made by the SEP holder, who is bound by antitrust law, will be entirely omitted or, at best, conducted only superficially.

2. Patent holders’ obligation to place an offer

233 The Local Division Hamburg agrees with the LD’s Mannheim and Düsseldorf, that provided that the initial willingness to take a licence has been sufficiently demonstrated by the implementer, the SEP holder’s offer must in principle always be reviewed for compliance with FRAND principles (LD Mannheim, decision of 22 November 2024 – UPC_CFI_210/2023 – Panasonic v OPPO; Decision of 16 June 2026 – UPC_CFI_86/2025 – InterDigital v The Walt Disney Company et al, mn. 227; LD Düsseldorf, decision of 18 March 2026 – UPC_CFI_135/2024 – Dolby vs. Beko, mn. 492; differentiating: LD Munich, decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 135). This step must, in principle, not be omitted or carried out only in a cursory manner. In this regard, an examination that seeks to comply with the case law of the ECJ must not only analyse the patent user’s conduct for indications to allege a lack of willingness to licence, without seriously examining the SEP holder’s offer. The SEP holder is therefore generally obliged, when submitting its offer, to demonstrate and explain – to the best of its ability given the stage of negotiations – why it considers that the offer it has submitted can be regarded as FRAND-compliant. If the SEP owner’s offer is not found to be FRAND, there is no injunction and no undue pressure on an implementer to accept licence terms, which are not FRAND.

234 However, the interplay of reciprocal obligations in the negotiations are also determining the patent holder’s obligations with respect to his offer as defendants cannot expect the claimant to make an offer that fully reflects the circumstances concerning them if they are unwilling to disclose these circumstances (LD Mannheim, decision of 22 November 2024 – UPC_CFI_210/2023 – Panasonic v OPPO, mn. 202).

- 235 The court's assessment depends on the parties' allegations and arguments in a party-driven pre-trial process. This means, that the extent to which the court examines the claimant's conduct depends to a large extent on which points the patent infringer raised against the patent holder during the negotiation process and, conversely, what information the patent holder made available to the patent infringer in order to be able to make an offer tailored to the infringer's circumstances. Objections raised solely in court against the backdrop of the threat of an injunction are not sufficient. This is because, save in extreme circumstances, the patent infringer is always under an obligation to respond to an offer from the SEP holder and, at the very least, to raise objections to it and request amendments (LD Munich, decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 135; LD Mannheim, Decision of 16 June 2026 – UPC_CFI_86/2025 – InterDigital v The Walt Disney Company et al, mn. 228).
- 236 On a general note, it is uniformly accepted that FRAND is a range (LD Mannheim, decision of 22 November 2024 – UPC_CFI_210/2023 – Panasonic v OPPO, mn. 224). This means, there is not just a single FRAND offer, but, within that range, several forms of licence agreement, all of which may satisfy the FRAND criteria. Consequently, the claimant retains a margin of manoeuvre within this range. For competition law reasons, it is not obliged to submit the cheapest offer still falling within the corridor. Nor is it required to base its offer on a calculation method preferred by the other party. From the perspective of reasonableness, it must simply not deviate in a manner that can no longer be justified from the circumstances used as benchmarks— whether these circumstances are set out in its own licence agreements, which generally carry the strongest evidential weight, or in the terms of licence agreements used for comparison, which have, for example, been discussed in court decisions and which can be applied to the specific circumstances (LD Mannheim, decision of 22 November 2024 – UPC_CFI_210/2023 – Panasonic v OPPO, mn. 224).
- 237 Where the patent holders have made several offers, provided that the above-mentioned conditions are met, their latest offer still open for acceptance must be assessed for compliance with FRAND. The mere submission of an initial offer that does not comply with FRAND does not in itself constitute market abuse (LD Munich, decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 136). Rather, this merely represents the starting point for negotiations, during which the patent holder is expected to develop an offer that complies with FRAND. Only if the patent holder “is not prepared to back down [from unreasonable licensing terms] even at the end of negotiations” does abusive conduct exist. Hence, the patent proprietor's last standing offer needs to be examined by the Court (LD Mannheim, decision of 22 November 2024 – UPC_CFI_210/2023 – Panasonic v OPPO, mn. 221 ff.).

3. Pool v bilateral route

- 238 In principle, the patent holder can fulfil its obligations by either offering a pool license or a bilateral license. The ECJ in Huawei v. ZTE did not address patent pool licensing. The judgment concerned a bilateral dispute between a single SEP holder and a single implementer. The ECJ's framework establishes the obligations that the SEP holder must

fulfil before seeking an injunction but does not prescribe the channel through which these obligations must be discharged.

- 239 In so far as the patent holder has, in accordance with the Huawei v. ZTE programme, made an offer relating to a bilateral license to the patent holder's portfolio AND an offer relating to a license to the portfolio of a patent pool in which the patent to be licensed or the patent holder's portfolio is included, the infringement action seeking an injunction, recall and destruction cannot be dismissed if it is to be assumed that at least one of the two offers satisfies the requirements of competition law. This is because, for competition law reasons, the patent holder is only required to indicate to the patent user one licensing route that satisfies the FRAND requirements (LD Munich, decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 136).
- 240 However, there are constellations where the implementer can demand a bilateral licence instead of a pool licence. Such constellations are for example, but non-exclusively, given when the implementer expressed its desire to obtain a multi-standard-licence or to sign cross-licencing agreements with the individual patent proprietors. The same applies when an implementer had already advanced with a significant number of other pool contributors to conclude bilateral licences for the whole pool portfolio.
- 241 In these constellations, it follows the contracting obligations under antitrust law that the SEP-holder is required to engage in bilateral license negotiations upon the license seeker's reasonable request, and in such a case cannot simply refer the license seeker to the possibility of a pool license. The implementer's demand can then be based in the prohibition of agreements that could disrupt competition according to Art. 101 TFEU and the prohibition to abuse a dominant position according to Art. 102 TFEU.
- 242 This is addressed in the European Commission's Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements (2014/C 89/03), according to which "*Licensors and licensees should be free to develop competing products and standards*" and "*should also be free to grant and obtain licences outside the pool.*" (mn. 270). This is also reflected by the rules established with the majority of (if not all) standardization bodies and pools, who – as in the present case in point 8.1. of the Via pool conditions – acknowledge the licensees' freedom to choose the bilateral route.
- 243 Having said that, as the interests of both sides have to be brought into balance, the implementer can only successfully demand a bilateral offer instead of a pool offer, when he/she has comprehensible reasons for this choice. Furthermore, choosing the bilateral route does not ease the implementer's obligation to show its willingness to sign a licence throughout the course of the negotiations (comp. LD Mannheim, Decision of 16 June 2026 – UPC_CFI_86/2025 – InterDigital v The Walt Disney Company et al, mn. 237). It has to be noted that demanding a bilateral offer is not, in and of itself, sufficient to determine that the implementer is also genuinely serious about it. In this regard, the implementer's conduct throughout the negotiations must always be considered in its entirety. In particular, an implementer's insistence on bilateral licensing can still indicate

unwillingness when the implementer fails to present comprehensible reasons for its decision to opt for bilateral agreements, failed to conclude bilateral agreements with the other SEP pool licensors in reasonable time, and refrained from placing a security. This is even more true when initially being provided a FRAND pool offer.

III. APPLICATION TO THE PRESENT CASE

244 In the present case, Defendant has not convincingly demonstrated that its insistence on a bilateral licence, despite being offered a FRAND conform pool licence, is based on comprehensible reasons. Taking all circumstances of the case into account, including that Defendant never came into possession of sufficient bilateral agreements with the other SEP pool licensors, and even then, refrained from placing a security for Claimant's potential licence claims, Defendant cannot be considered to be truly willing to sign a licence for the use of the patented technology.

1. Notification

245 In the present case it is not disputed that the Via pool respectively Claimant notified the Defendant of the infringement of the asserted patent claims.

2. Negotiations started 2017.

246 As intended by the ECJ, the parties entered into negotiations concerning a license agreement back in 2017.

a) Via's FRAND pool offer

247 Undisputedly, Via provided Defendant an offer at the in-person meeting of 24 October 2017 with a power point presentation [REDACTED] containing information on the Licensor Partners of the Via AAC patent pool as well as the License Scope and AAC license fees [REDACTED] starting from [REDACTED]. Subsequently, Via sent the Defendant, by email dated 28 November 2023, a copy of the standard license agreement and an up-to-date 'essentiality overview of the patents', in which the relevant essential patent claims of the essential patents are mapped to the representative sections of the standard [REDACTED].

248 Via's pool offer contained a word-wide rate table with volume discounts plus the offering of a split rate table, also with volume discounts [REDACTED]. It is not disputed that Via last contacted the Defendant on 2 October 2024, at which Via sent the Defendant an updated [REDACTED] and the latest version of the AAC patent license agreement [REDACTED].

249 While Via indicated that the Defendant has the option to negotiate bilateral licenses directly with the individual licensors instead of taking a pool license in the same first letter (Exhibit HL – FRAND 3), the panel has to consider the pool offer being FRAND. That is because Defendant neither out of court nor within the present proceedings raised substantiated argument against the FRAND nature of the pool offer.

250 The extent to which the court examines a patent proprietor's conduct or the conduct of a pool acting on the patent proprietor's behalf is limited and depends to a large extent on which points the patent infringer raised against the patent holder during the negotiation process and, conversely, what information the patent holder made available to the patent infringer in order to be able to make an offer tailored to the infringer's circumstances (LD Munich, decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 135; LD Mannheim, Decision of 16 June 2026 – UPC_CFI_86/2025 – InterDigital v The Walt Disney Company et al, mn. 228). Objections raised solely in court against the backdrop of the threat of an injunction are not relevant, if they could have been raised in the negotiations in the first place. This means, the fact that the Defendant in the present proceedings claimed for the first time that [REDACTED] – and even that for the first time in its Rejoinder Part II (mn. 364-367) – cannot be deemed a valid defence.

251 For avoidance of doubt, Defendant's late filed critique that the "aging of the AAC technology and patent expiry" had not been considered and that (Claimant's) [REDACTED] was unFRAND, is not convincing, to begin with. Not only were the lists of the patents involved ("AAC essential patent list") communicated to Defendant from the beginning (see e-mail dated 24 August 2017, Exhibit BP 5e, and e-mail 2 October 2024, Exhibit BP 5g) and put Defendant [REDACTED]. It is also substantially undisputed that at the time of Via's (and Claimant's) first offers, Claimant's share of patents in the Via AAC patent pool [REDACTED], and [REDACTED] as new patents entered into the pool due to technological developments.

252 Furthermore, it is substantially undisputed, that there is a practice of [REDACTED] which is accepted by nearly the entire worldwide market. Defendants did not present any indication that nearly 1,000 licensees entered into agreements with Via without the volume discounts being applied. Claimant also successfully demonstrated that volume discounts are not specific to the Via AAC pool. For instance, the Access Advance HEVC pool for video coding technology with far over 300 licensees applies volume discounts in the form of category caps and company ceilings, as well.

253 Finally, the Via offer contained also an alternative rate structure, offering lower rates for R2 countries in recognition of the reduced patent coverage in those markets as an option.

b) No comprehensible reasons for demanding the bilateral route

254 Defendant, when demanding a bilateral licence instead of the offered FRAND pool licence, failed to present comprehensive reasons for this decision.

255 During the negotiations, Defendant neither requested a multi-standard-licence from Claimant nor explained that such a question in mind was the reason behind its demand of bilateral licence instead of a pool licence. It is also selfevident that Claimant, as a research institute, is no suitable counterpart for a cross-licencing, anyway. While Defendant pointed out in the negotiations that it had already advanced with a significant

number of other pool contributors to conclude bilateral licences for the whole pool portfolio, it was not in possession of other bilateral agreements with the other SEP pool licensors within reasonable time (see also below).

256 Since 2018 Defendant signed licenses [REDACTED] (cf. exhibit BP-5e). This means, in the time span of four and a half years after Via's first pool offer in October 2017 Defendant was not able to conclude bilateral licence agreements with the majority of the other pool contributors, not just apart from Claimant. Hence, Defendant cannot successfully claim that its continuous insistence on bilateral licences is based on advanced and fruitful negotiations with the rest of the pool contributors. To the contrary, it is undisputed that [REDACTED] anymore. That means, out of the almost nine years that have passed up and until today after the initial (FRAND conform) pool offer, Defendant never possessed more than a fraction of the technology covered by the bilateral licences and for not more than a short period of time, rendering the defendant's demand unreasonable.

c) Further assessment of willingness

257 The fact, that Defendant, while implementing the patented technology of the patent in suit, did not successfully enter into bilateral agreements with the majority of the other pool members, and refrained from placing a security despite of that, allows only the conclusion that Defendant is at the core unwilling to sign a licence with Claimant.

258 Whereas, as reflected in the pool conditions themselves, the implementer can demand a bilateral licence instead of a pool licence, it has to show its willingness to sign a licence throughout the course of the negotiations (LD Mannheim, Decision of 16 June 2026 – UPC_CFI_86/2025 – InterDigital v The Walt Disney Company et al, mn. 237). To assess whether the expressed willingness is of true nature, not only the reasons for its decision to opt for bilateral agreements have to be examined, but also the other elements of its conduct. In particular, it has to be examined if the implementer's demand for a bilateral route was abused simply to gain time. Especially, when being presented with a FRAND conform pool offer, it has to be expected that the implementer closes bilateral licence agreements with the individual patent holders in due course.

259 This has not happened.

260 Defendant did not sign bilateral licences with the pool contributors within reasonable time. As stated above, since 2018 Defendant signed licenses [REDACTED] (cf. exhibit BP-5e). In the time span of four and a half years after Via's first pool offer in October 2017 Defendant used the AAC standard without licence agreements covering this use, making it doubtful that Defendant was truly seeking licences for the use of the patented technology. In addition, it is undisputed that [REDACTED] anymore. Out of the almost nine years that have passed up and until today after the initial (FRAND conform) pool offer, Defendant only had a fraction covered by bilateral licences.

261 While this might in part be related to a reluctance of the patent holders to close bilateral licence agreements in general, or with the Defendant in particular, as argued by Defendant, this situation does not release Defendant from its obligation to re-assess its negotiation strategy, to react properly and to safeguard successful negotiations by placing a security for the patent holders' potential licence claims. Otherwise, the Defendant cannot successfully prove to have true and comprehensible reasons to insist on the bilateral route. This is not altered by Defendants' statement that the bilateral licences were cancelled by the respective licensors, as Defendant never was in the possession of more than three bilateral licence agreements, anyway. This is a situation, as burdensome as it may be, where it requires the implementer to take further steps to secure the desired bilateral licences when still denying the pool offer, such as securing the patent holders' interests by placing a security. This has not happened, either. It took Defendant almost eight and a half years to state that it "considers" the placing of a security for Claimant's possible licence claims (Rejoinder Part II, mn. 371), however, without following through with it.

262 For avoidance of doubt, this does not mean that panel concurs with the concept of an automatic trigger followed by the LD Munich (decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 140; decision of 11 February 2026 – UPC_CFI_171/2025 - Philips v Belkin, p. 33) and the German Federal Court of Justice in the recent decision against the very Defendant dated 27 January 2026 (KZR 10/25 – VoiceAge EVS v. HMD), according to which the placement of a security is always a mandatory condition and without any security the FRAND defence can always be dismissed right away. To the understanding of the panel such an approach would not be in line with the programme the ECJ envisaged (see LD Mannheim Local Division, decision of 22 November 2024 – UPC_CFI_210/2023, paras. 195–198).

263 However, in a case where there is a pool offer, which was never contested and thus has to be considered FRAND, and where the bilateral negotiations with the patent proprietor over the course of almost nine years never led to the closing of a licence agreement, let alone with almost all the other pool contributors, the implementer's choice not to place a security has to be considered yet another sign of unwillingness.

d) Result

264 Taking the Defendant's conduct as a whole into account, it cannot be assumed that the Defendant is genuinely prepared to sign a licence agreement with the claimant. Defendant's insistence on bilateral licensing despite a FRAND pool offer, while failing to conclude bilateral agreements with the vast majority of pool licensors for (more than) seven years is an unyielding demand which does prove its unwillingness (comp. Higher Regional Court Düsseldorf, GRUR 2022, 1136, mn. 183), in particular when not followed by a security. This conduct over the course of – up and till today – almost nine years is no basis to object to a patent proprietor's legal action before a competent court.

265 As there has been no sufficient indication of a willingness to sign a licence by Defendant prior to the bringing of the action, in accordance with the principles established in Huawei

v. ZTE the assessment process is terminated. Whether the claimant's offer(s) meets the FRAND requirements – which would be the next step in the assessment process had there been a sufficient indication of a willingness to grant a licence – therefore no longer needs to be examined.

3. No reference to the ECJ

266 There was no need to make a reference to the ECJ. In matters concerning the correct interpretation of European law, the Court of First Instance may refer questions relevant to the decision to the ECJ, Art. 21 UPCA, Art. 267 TFEU.

267 For one, the panel sides with Defendant that there can be constellations where the request for a bilateral licence offer even in the presence of a pool offer is justified. However, the questions arising in the present case relate solely to the assessment of the implementer's willingness in the specific case at hand and can be resolved by applying the principles developed by the ECJ, which enable the courts responsible for applying the law in individual cases to make a proper assessment of the case in question.

K. CONSEQUENCES

I. RIGHT TO REQUEST AN INJUNCTION

268 Taking into account the circumstances of the case, Claimant is entitled to an injunction prohibiting the continuation of the infringement pursuant to Art. 25(a) in conjunction with Art. 63 (1) UPCA. If the patent proprietor brings an action for infringement and the court finds that an intellectual property right has been infringed or is at risk of being infringed, it shall issue an order prohibiting the continuation of the infringement, provided there are no specific grounds against doing so, Art. 3 of the Enforcement Directive (2004/48/EC). When assessing the proportionality of injunctions and other measures, account may be taken not only of the interests of the parties to the proceedings, but also of the interests of third parties (UPC_CoA_464/2024, decision of 25 November 2025, headnotes 14–16 – Meril v Edwards).

1. Injunction

269 In applying these principles, there is no apparent reason to refrain from issuing an injunction. Rather, proportionality considerations have already been comprehensively taken into account in the context of assessing the compulsory licence (FRAND) defence under competition law, by applying the balanced approach set out by the programme of proceedings following Huawei v ZTE by the Local Divisions Mannheim (decision of 22 November 2024 – UPC_CFI_210/2023 – Panasonic v OPPO, mn. 191 ff.; Decision of 16 June 2026 – UPC_CFI_86/2025 – InterDigital v The Walt Disney Company et al, mn. 223 ff.), Munich (decision of 18 December 2024 – UPC_CFI_9/2023 – Huawei v Netgear, p. 129 ff.) and Düsseldorf (UPC_CFI_135/2024, decision of 18 March 2026, - Dolby vs. Beko, mn. 472).

270 As Defendant does not prevail with its FRAND defence, the requested injunction has to be granted. It is the implementer's responsibility to secure a licence. The Claimant's

interest is not outweighed by another potential remedy, as Defendant hasn't provided a security.

2. Claims prior 1 June 2023 / Opt-In

271 It follows the case-law of the UPC that for actions that have occurred before the entering into force of the UPCA, the national law remains applicable (LD Hamburg, decision of 11 February 2026 – UPC_CFI_274/2023 – FIVES ECL v REEL GmbH, mn. 29 ff; LD Mannheim, UPC_CFI_162/2024, decision of March 11, 2025, Hurom vs. NUC Electronis, Headnote 4). It has to be differentiated in the following way:

- a) to acts committed after the entry into force of the UPCA, the substantive law as laid down in the UPCA applies;
- b) to acts committed before the entry into force of the UPCA, the substantive national laws apply;
- c) to ongoing acts started before the entry into force of the UPCA and continued after the entry into force on 1 June 2023, the substantive law as laid down in the UPCA applies.

272 Although the UPCA – as the new law – does not apply to legal relationships that arose under the old legal system and have become final, it does apply in the present case to the infringing acts conducted by Defendant as it relates to the future effects of a legal relationship that arose under the law in force prior to the amendment and have not become final, as well as to facts that arose after the new law came into force (comp. LD Hamburg, decision of 11 February 2026 – UPC_CFI_274/2023 – FIVES ECL v REEL GmbH, mn. 33). Thus, not only the requests for injunctive relief, but also for damages, recall, removal, destruction and information as future effects of ongoing infringing acts are governed by the UPCA, even when initiated before 1 June 2023.

3. No claims prior to the release of Android 9

273 As Claimant directed its infringement allegations against devices, in particular smartphones and tablets, all using Android OS version 9 or higher, and as Android 9 was released on 6 August 2018, the claims can only be granted taking on 6 August 2018 as the new starting point. This was adjusted by the Claimant with the change of claims by Claimant's Reply, R. 263 RoP.

4. Not time-barred

274 As far as the actions in question are ongoing they are not subject to a time-bar from the outset. Although Defendant did not specify which acts were finalized at a given point in time and thus could be subject to a time-bar, Claimant's requests are not time-barred in the present case.

275 Article 72 UPCA states a five-year limitation period, which according to the Defendant means that the Claimant's claims are (partially) time-barred at least for the period before 4 June 2020 (as the action was filed on 4 June 2025). In addition, Defendant claims that pursuant to Articles 72 and 24(2), (3) UPCA, the shorter national limitation period of three

years under Sections 195 and 199 of the German Civil Code (BGB) also applies, which should be resulting in the dismissal of Claimant's claims insofar as Claimant asserts past claims for the period before 1 January 2022.

276 While the Defendants reference to the shorted period under German Law is correct as the regular limitation period is three years, starting from the end of a year, §§ 195, 199 German Civil Code, the consequence are not as desired by Defendant. As there were negotiations in the past, this suspends the limitation period from running. The relevant § 203 German Civil Code states:

1Where negotiations are ongoing between the debtor and the creditor regarding the claim or the circumstances giving rise to the claim, the limitation period is suspended until one or the other party refuses to continue the negotiations. 2The limitation period begins to run no earlier than three months after the suspension ends.

277 According to German Law, if the person entitled to compensation allows the negotiations to lapse, the suspension ends at the point in time when the next step in the negotiations would have been expected of them (BGH NJW 2009, 1807). But still, even the fact that Claimant did not continue the negotiations between 6 December 2019 and 26 January 2023, does not lead to a time bar of sales that were conducted within that period. Limitation was suspended for three months after walking away from negotiations, i.e. until 6 March 2020, § 203 2nd sentence German Civil Code. Claims afterward start to fall under the statute of limitations at the end of the year 2020, and lapse at the end of 2023. As early in 2023 the negotiations were resumed no time-bar is applicable.

5. Recall, removal from the supply chain and destruction

278 The decision regarding the recall, as well as the definitive removal from the supply chain and destruction, is justified under Article 25(a) of the UPC Regulation in conjunction with Article 64(2)(b), (d) and (e), and (4) of the UPC Regulation.

279 Removal is expressly requested only with respect to infringing products pursuant to Sec. A.I.1, which have been placed on the market since August 6, 2018 in the Federal Republic of Germany, the French Republic, the Republic of Italy, the Kingdom of Belgium and the Kingdom of the Netherlands. Destruction is requested only for the same infringing products referred to in Sec. A.I.1., which are directly or indirectly within their possession and/or ownership from the distribution channels. This is not disproportionate.

III. DECLARATION OF LIABILITY FOR DAMAGES ON THE MERITS

280 The declaration of liability for damages on the merits is based on Article 68(1) UPCA. Pursuant to this Article the court shall, upon application by the aggrieved party, order that the infringer, who knew or ought reasonably to have known that he was committing an act of patent infringement, shall pay the aggrieved party reasonable damages to compensate for the actual loss suffered by the latter as a result of the infringement. Defendant was since being approached by the Via pool aware of the intellectual property

rights in question, hence before placing the contested embodiments with Android 9, i.e. after 6 August 2018, on the market.

IV. PROVISION OF INFORMATION AND ACCOUNTING

281 Claimant is entitled to information pursuant to Article 25(a) UPCA in conjunction with Article 67 UPCA. There are no objections regarding the manner in which the information is to be provided. The Claimant may also request the production of supporting documents for the information under Article 67(1) UPCA.

V. PENALTY

282 The imposition of a penalty payment in connection with an injunction follows Art. 63(2) UPCA. The imposition of a penalty payment in respect of the measures of provision of information, recall, removal and destruction is based on Art. 82 (1) and (4) UPCA, R. 354.3 RoP. The penalty frame of up to EUR 100,000 for each day of infringement of the injunctions, EUR 50,000 for each day of non-compliance with the orders to recall, destroy and remove, as well as of EUR 10,000 for each day of non-compliance with the order to provide information, is appropriate and gives the Local Division the necessary flexibility to take into account, in the event of non-compliance, the specific circumstances of the individual case — including the conduct of the infringer — and, on that basis, to set an appropriate penalty payment in accordance with Article 82 (4), 2nd sentence UPCA in conjunction with R. 354.4 RoP.

VI. PUBLICATION

283 The request for publication of the decision is dismissed. Despite the severity and continuity of Defendants infringement without taking a licence of placing a security, FRAND cases are closely watched by the legal community, and Defendant is a very prominent participant in court proceedings, nationally as internationally. Hence, any decision in the present case is already granted some publicity, which sufficiently ensures Claimant's interests.

VII. INTERIM AWARD OF COSTS

284 The request for an interim award of costs is well-founded.

285 Pursuant to R. 119 RoP, the court may award the successful party provisional damages intended to cover, at the very least, its anticipated costs in the proceedings for damages and compensation. Claimant's estimation for these costs, based on a value in dispute of EUR 1,500,000 and in accordance with the UPCA scale of fees (Court costs: EUR 19,000 and Legal representation costs: EUR 200,000), appear reasonable. The potential licence fee that might be claimed as damages for the use in the past year, will pretty likely exceed these numbers. R. 119 RoP is designed to secure a claimant not to bear the full risk of Defendant's potential insolvency throughout all subsequent procedures.

VIII. SECURITY

286 Where appropriate, the enforcement of a decision may, pursuant to Art. 82(2) UPCA, be subject to the provision of security or an equivalent assurance to ensure compensation for any damage suffered, in particular in the case of injunctions. According to R. 352.1 RoP, decisions and orders may be subject to the rendering of a security (whether by deposit or bank guarantee or otherwise) by a party to the other party for legal costs and other expenses and compensation for any damage incurred or likely to be incurred by the other party if the decisions and orders are enforced and subsequently revoked.

287 In the present case, Defendant hasn't requested that the Claimant places a security, but only that Defendant is permitted to avert enforcement by providing security. Also, there are no signs that the Claimant, who is a well-known public research institution, would not be able to reimburse any damages in case the measures are lifted.

288 Whereas the practice of the other Local Divisions varies (LD Munich, UPC_CFI_9/2023, Huawei v Netgear: 1 Mio EUR; LD Mannheim, UPC_CFI_210/2023 Panasonic v Oppo: 10 Mio; no security: LD Düsseldorf (UPC CFI 135/2024), it has to be seen that the injunction has a massive effect on the Defendant's business. Hence, a security in the amount of EUR 1 Mio seems appropriate for the injunctive relief, EUR 350,000 for recall and destruction, and EUR 150,000 for information.

IX. COSTS

289 The distribution of costs occurred followed the outcome of the proceedings. The partly reduction of the requested injunction with the Reply (R. 263) is not significant.

DECISION

A. Defendant is ordered

I.1 to cease and desist from offering, placing on the market, using or importing or processing or storing for the aforementioned purposes in the Federal Republic of Germany, the French Republic, the Republic of Italy, the Kingdom of Belgium and the Kingdom of the Netherlands, devices for upmixing a downmix audio signal, in particular smartphones or tablets that use Android version 9 or higher and make use of the USAC standard, describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, comprising the following features:

an upmixer configured to apply temporally variable upmix parameters to upmix the downmix audio signal in order to obtain the upmixed audio signal; and a parameter interpolator, wherein the parameter interpolator is configured to obtain one or more temporally interpolated upmix parameters to be used by the upmixer on the basis of an

information describing a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter, wherein the parameter interpolator is configured to separately interpolate

(a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

(b) between a phase value of the first complex-valued up-mix parameter and a phase value of the second complex-valued upmix parameter,

to obtain the one or more temporally interpolated complex-valued upmix parameters.

(Direct infringement of claim 1 of EP 2 380 167 B1)

I.2 to cease and desist from offering or offering to supply in and for the use in the Federal Republic of Germany and/or the French Republic and/or the Republic of Italy, and/or the Kingdom of Belgium and/or the Kingdom of the Netherlands, means, namely smartphones and tablets that use Android OS version 9 or higher and make use of the USAC standard, and which are suitable and intended for applying a method for upmixing a downmix audio signal describing one or more downmix audio channels into an upmixed audio signal describing a plurality of upmixed audio channels, the method comprising:

obtaining one or more temporally interpolated complex-valued upmix parameters on the basis of a first complex-valued upmix parameter and a subsequent second complex-valued upmix parameter, wherein the interpolation is performed separately

(a) between a magnitude value of the first complex-valued upmix parameter and a magnitude value of the second complex-valued upmix parameter, and

(b) between a phase value of the first complex-valued up-mix parameter and a phase value of the second complex-valued upmix parameter; and

applying the interpolated complex-valued upmix parameters to upmix the downmix audio signal, in order to obtain the upmixed audio signal.

(Indirect infringement of claim 14 of EP 2 380 167 B1)

II. at their own expense,

1. to recall from commercial customers the infringing products pursuant to Sec. A.I.1 and placed on the market in Federal Republic of Germany, the French Republic, the Republic of Italy, the Kingdom of Belgium and the Kingdom of the Netherlands since August 6, 2018, by written notice referring to the patent infringing condition of the products as established by decision of the Unified Patent Court and with a binding commitment to reimburse any fees as well as to assume all necessary packaging and transport costs, including customs and storage costs associated with the return, and to take back said products; Claimant is to be provided with a sample of the recall

letter as well as a list of recipients including names and postal addresses or, at Defendant's option, an electronic copy of all recall letters.

2. to definitively remove the infringing products pursuant to Sec. A.I.1, which have been placed on the market since August 6, 2018, from the distribution channels, taking in particular the following measures:
 - a. Defendant shall take all possible and reasonable measures to identify the locations and owners of such products referred to in Sec. A.I.1.
 - b. To the extent that Defendant themselves has legal or actual control over such products referred to in Sec. A.I.1., they must take all legally permissible and reasonable measures so that these products come into, and remain in, the immediate possession of Defendant.
 - c. To the extent that Defendant does not have legal or actual control over such products referred to in Sec. A.I.1., they must take all legally permissible and reasonable measures either (i) so that persons holding claims for surrender or destruction against those having control over said products assert such claims, or (ii) support these persons in asserting their claims.
3. destroy the infringing products referred to in Sec. A.I.1., which are directly or indirectly within their possession and/or ownership, or alternatively deliver them up for destruction by a bailiff appointed by Claimant.
- III. to provide Claimant with information in an electronic, organized, computer-searchable directory on the extent to which they have committed the acts referred to in Sec. A.I. above since August 6, 2018, within a period of 30 days after service of the notification within the meaning of R. 118.8 sentence 1 RoP and, if applicable, the certified translation, stating
 1. the origin and distribution channels of the infringing products broken down by year, and the names and addresses of the commercial customers;
 2. the quantities produced, manufactured, delivered, received or ordered, as well as the price obtained for the infringing products; and
 3. the identity of any third person involved in the production or distribution of the infringing products or in the use of the infringing process; and
 4. the advertising operated, broken down by advertising media, their circulation, distribution period and distribution area, in the case of Internet advertising, the domain, the access figures and the placement periods,
 5. the prime costs broken down by the individual cost factors and the profit generated, whereby electronic copies of the relevant documents (namely invoices) are to be submitted as proof of the information, whereby details outside the required information requiring confidentiality may be redacted;
- IV. to pay Claimant an amount of EUR 219,000 as an interim award of damages.

- B. Defendant is obligated to compensate Claimant for all damages that Claimant has suffered and will suffer as a result of the acts set forth in Sec. A.I. above, committed since August 6, 2018.
- C. Defendant's Counterclaim for revocation is rejected and EP 2 380 167 is upheld as granted.
- D. The further requests are dismissed.
- E. In case of any violation of the order under Sec. A.I., A.II. and/or A.III. above, Defendant shall pay a penalty payment to the Court in the amount of up to EUR 100,000 for each day of violation of the order pursuant to A.I., up to EUR 50,000 for each day of violation of the order pursuant to A.II., and up to EUR 10,000 for each day of violation of the order pursuant to A.III.,
- F. Defendant shall bear the costs of the proceedings.
- G. The orders shall be enforceable only after the Claimant has notified the Court which part of the orders it intends to enforce, this notification has been served on the Defendant concerned and, if applicable, a certified translation of the orders in the official language of a Contracting Member State in which the enforcement shall take place has been provided by the Claimant and served on the Defendant.

Furthermore, the orders shall only be enforceable once the Claimant has provided security in favour of Defendants in the form of a bank or savings bank guarantee, separately for the individual enforceable parts of the judgment, with the following individual amounts:

Injunction: EUR 1,000,000.-

Recall and Destruction: EUR 350,000.-

Information: EUR 150,000.-

Interim award of damages: the amount to be enforced

SIGNATURES

Sabine Klepsch Presiding Judge	SABINE MARIA KLEPSCH Digital unterschrieben von SABINE MARIA KLEPSCH Datum: 2026.08.20 17:20:06 +02'00'
Dr. Stefan Schilling Legally qualified Judge and Judge- rapporteur	STEFAN SCHILLING Digital signiert von STEFAN SCHILLING DN: cn=STEFAN SCHILLING, c=DE, email=stefan.schilling@unifiedpatentcourt.org Datum: 2026.08.21 08:47:55 +02'00'
Peter Agergaard Legally qualified Judge	Digitally signed Agergaard Peter 19:38:54 +0200 Unified Patent Court Einheitliches Patentgericht Jurisdiction unifiée du brevet

Dr. Christoph Norrenbrock Technically qualified Judge	
For the sub-registry	

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 OF 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.

INSTRUCTION TO THE REGISTRY

A certified copy of the decision shall be sent to the European Patent Office and the national Patent and Trademark offices as soon as the decision on the revocation action has become legally binding. This decision was read in open court on 19 December 2025.

This decision was announced in public session on 24 August 2026

Dr. Stefan Schilling

Legally qualified Judge