Unified Patent Court
Einheitliches Patentgericht
Juridiction unifiée du brevet

Paris Local Division

UPC_CFI_301/2025
UPC_CFI_713/2025

# Decision on the merits of the Court of First Instance of the Unified Patent Court delivered on 19 August 2026

HEADNOTES:

1-The Court agreed to declare the Defendant's request permissible, i.e. to decide upon the Counterclaim for revocation only if the patent is found infringed, thereby making the Counterclaim for revocation subject to an intra-procedural condition. This procedural approach is consistent with established case-law on conditional Counterclaims for revocation (cf. LD Munich, Decision issued on 11 March 2026, UPC_CFI_180/2025 and UPC_CFI_210/2025; LD Mannheim, Decision issued on 5 December 2025, UPC_CFI_414/2024; LD Munich, Decision issued on 13 January 2026, UPC_CFI_628/2024 and UPC_CFI_125/2025, and recently confirmed by the CoA, see decision UPC-CoA-40/2026, Emboline v AorticLab, 16 July 2026; HEADNOTES 1) "*Limiting a counterclaim for revocation by making it conditional upon a finding of infringement is permissible*".) Thus, the Court will examine the infringement matter prior to the validity matter in the present decision. (see §7 of the present decision)

2-The Court recalls that the burden of proving infringement rests on the Claimant of the main action. It is therefore for the Claimant to establish that the accused products implement all features of the asserted claims, either by direct use or by indirect use of the invention. In the present case, the Court considers that a solution requiring the transmission of any additional data goes against the teaching of the patent and is not encompassed in the scope of the claim. The Claimant has not established that the claimed technical effect is achieved by the attacked embodiments; the demonstration of the infringement proposed by the Claimant relies on additional corrective information that is inconsistent with the technical teaching of the Patent. Therefore, the Claimant fails to prove the alleged infringement. (see § 74 and 92-95 of the present decision)

KEYWORDS:

Conditional Counterclaim for revocation- Efficiency of the procedure- Infringement action- Burden of proof-

CLAIMANT

Orange SA
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92449 ISSY LES MOULINEAUX CEDEX-FR

Represented by Dr Volkmar Henke
and other representatives of Bardehle Pagenberg

DEFENDANT

HMD Global Oy
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02600 Espoo – FI

Represented by Oliver Bäcker
and other representatives of Hogan Lovells Cadwalader

PATENT AT ISSUE

| *Patent no.* | *Proprietor* |
|---|---|
| EP2345029 | Orange SA |

COMPOSITION OF PANEL – FULL PANEL

| | |
|---|---|
| Presiding judge & Judge-rapporteur | Camille Lignières |
| Legally qualified judge | Carine Gillet |
| Legally qualified judge | Margot Kokke |
| Technically qualified judge | Alessandro Sanchini |

LANGUAGE OF PROCEEDINGS: English

## *DECISION*

THE PARTIES

1. ORANGE SA (hereinafter "ORANGE" or the "Claimant") is the largest telecommunications company in France. The Claimant is the registered owner of the German, Italian and French parts of the patent EP 2 345 029 B1 (hereinafter "EP'029" or "The Patent").

2. HMD Global Oy (hereinafter "HMD" or the "Defendant") is a Finnish company that manufactures smartphones and tablets. HMD sells Android smartphones and tablets as an exclusive licensee for Nokia-branded mobile phones, including in Germany, France, and Italy. In addition, the Defendant offers smartphones under its own brand "HMD".

**THE CONTEXT of the infringement action**

3. In its statement of claim ("SoC"), ORANGE explains that the Patent-in-suit is essential to the MPEG-4 Part 3-Audio standard and that this standard is one of the standardisations in the Advanced Audio Coding (hereinafter "AAC") family of codecs. AAC relates to the compression of digital audio data and is licensed in the Via Licensing Alliance (hereinafter "Via") AAC pool. ORANGE has entrusted Via to negotiate with third parties for obtaining a license to the Claimant's patent and the Via AAC patent pool.
4. According to ORANGE, some technologies used in HMD's products are implemented without the necessary licenses, in particular the use of Claimant's technology relating to the AAC standard. In the present case, the alleged infringing products are the HMD smartphones and tablets running Android 9 or higher, which are alleged to infringe patent EP2345029 because those devices are required to implement a standardised audio decoder called USAC (Unified Speech and Audio Coding), which, according to the Claimant, necessarily uses the patented decoding method.
5. ORANGE affirms that, despite the Via AAC patent pool's attempts to negotiate a licence granted to HMD, these attempts were unsuccessful with regard to the use of the patent in question (SoC §3), the Defendant claiming they prefer to negotiate bilaterally (SoC §20).

THE PROCEEDINGS

6. On 31 March 2025, ORANGE lodged an infringement action before the Paris Local Division against HMD, based on its European patent, EP'029.
   No preliminary objection was raised under R. 19 RoP.
   On 8 September 2025, HMD filed a Statement of defence with a Counterclaim for Revocation, and with an exhaustion objection and a FRAND defence.
   In its reply to the Statement of defence and its defence to the counterclaim filed on 17 November 2025, ORANGE rejected the arguments for revocation of its patent and filed an application to conditionally amend the patent with 9 auxiliary requests. ORANGE also rejected the exhaustion objection and the FRAND defence raised by HMD.
7. During the Oral hearing (on Day2, on 8 July 2026), HMD informed the Court that they wish to make their counterclaim for revocation conditional on the Court considering the patent to be infringed. Upon the request of the presiding judge, HMD confirmed this position in its brief submitted in the CMS on 17 July 2026, as follows:
   "We hereby confirm our request as made during the oral hearing, namely that a decision on the Counterclaim for revocation is rendered only if the Court finds that the attacked embodiments infringe the Patent-in-suit."
   ORANGE did not object to the HMD's request. (cf brief dated 17 July 2026: "*Claimant does not oppose to Defendant´s requests regarding the conditional nature of the Counterclaim*")
   The Court agreed to declare the Defendant's request permissible, i.e. to decide upon the Counterclaim for revocation only if the patent is found infringed, thereby making the Counterclaim for revocation subject to an intra-procedural condition. This procedural

approach is consistent with established case-law on conditional Counterclaims for revocation (cf. LD Munich, Decision issued on 11 March 2026, UPC_CFI_180/2025 and UPC_CFI_210/2025; LD Mannheim, Decision issued on 5 December 2025, UPC_CFI_414/2024; LD Munich, Decision issued on 13 January 2026, UPC_CFI_628/2024 and UPC_CFI_125/2025, and recently confirmed by the CoA, see decision UPC-CoA-40/2026, Emboline v AorticLab, 16 July 2026; HEADNOTES 1) "*Limiting a counterclaim for revocation by making it conditional upon a finding of infringement is permissible*".)
Thus, the Court will examine the infringement matter prior to the validity matter in the present decision.

## THE PATENT

### Presentation of the patent

8. ORANGE is the owner of a European patent designated as EP'029 entitled « *Procédé, programme informatique et entité de décodage d'un signal audio numérique* » (English translation of the title: "Method, computer program and device for decoding a digital audio signal", which relates to audio coding and decoding. (Exhibit BP-T 1; an English translation: Exhibit BP-T 2).
9. The Patent is based on the international application PCT/FR2009/051888 filed on 5 October 2009, and claims the priority of FR 0856822 dated 8 October 2008. The international application, was published as WO 2010/040937 on 15 April 2010, and took the place of the publication of the European patent application 09755960.3 in accordance with Art. 153(3) EPC. The language of the patent is French.
10. EP'029 was granted on 22 April 2015. It is still maintained in force in France, Germany and Italy at the time of filing of the SoC (Exhibits BP 1, BP 2, and BP 3: excerpts of the German, French, and Italian Patent Registers).
11. EP'029 has not been subject to any opt-out declaration under R. 5 RoP.
    The Patent has not been subject to any opposition proceedings before the EPO.
    EP'029 comprises 14 claims, including two (related) independent claims: Claim 1 and Claim 6.
    ORANGE alleges that the Defendant is infringing Claim 1 (method claim) and Claim 6 (device claim) with the HMD smartphones and tablets running Android 9 or higher.
    Claims 1 and 6 in French (which is the language of the Patent) read as follows:

*Revendication 1 :*

Procédé de décodage d'un signal numérique audio, comportant les étapes :
- recevoir (S110) un vecteur de transformée codant une première séquence d'échantillons du signal numérique audio selon un codage par transformée ;
- recevoir (S101) un vecteur de prédiction codant une deuxième séquence d'échantillons du signal numérique audio selon un codage de type CELP utilisant une prédiction à long terme ;
le procédé étant **caractérisé en ce que** la deuxième séquence commence avant la fin de la première séquence, une sous-séquence commune aux première et deuxième séquences étant ainsi reçue codée à la fois par le codage de type CELP utilisant une prédiction à long terme et par le codage par transformée ; et **en ce qu'**il comporte en outre les étapes :
a) appliquer (S112) au vecteur de transformée une transformée inverse du codage par transformée pour décoder une sous-séquence de la première séquence non codée par codage de type CELP utilisant une prédiction à long terme;
b) décoder (S114) au moins dans le vecteur de prédiction la sous-séquence commune aux première et deuxième séquences au moins par un décodage de type CELP utilisant une prédiction à long terme en se fondant sur au moins un échantillon issu de l'étape a) ;
c) décoder (S115) dans le vecteur prédictif par un décodage de type CELP utilisant une prédiction à long terme

une sous-séquence de la deuxième séquence non codée par codage par transformée, en se fondant sur au moins un échantillon issu de l'une des étapes a) et b).

*Revendication 6 :*

Entité de décodage (DECOD) d'un signal numérique audio, comportant des moyens de réception (150, 151):
- d'un vecteur de transformée (V_T) codant une première séquence d'échantillons du signal numérique audio selon un codage par transformée ; et
- d'un vecteur de prédiction (V_P) codant une deuxième séquence d'échantillons du signal numérique audio selon un codage de type CELP utilisant une prédiction à long terme ;
l'entité de décodage étant **caractérisée en ce que** la deuxième séquence commence avant la fin de la première séquence, une sous-séquence commune aux première et deuxième séquences étant ainsi codée à la fois par codage de type CELP utilisant une prédiction à long terme et par codage par transformée ; et **en ce qu'**elle comporte en outre :
- un premier décodeur (152, 153) pour appliquer au vecteur de transformée une transformée inverse du codage par transformée pour décoder une sous-séquence de la première séquence non codée par codage de type CELP utilisant une prédiction à long terme ;
- un deuxième décodeur (154) pour décoder au moins dans le vecteur prédictif la sous-séquence commune aux première et deuxième séquences au moins par un décodage de type CELP utilisant une prédiction à long terme en se fondant sur au moins un échantillon issu du premier décodeur par transformée ; et
- un troisième décodeur (155) prédictif pour décoder dans le vecteur prédictif par un décodage de type CELP utilisant une prédiction à long terme une sous-séquence de la deuxième séquence non codée par codage par transformée, en se fondant sur au moins un échantillon issu de l'un des premier et deuxième décodeurs.

12. Claim 1 and 6 can be structured as follows (English version):

Claim 1:

A. Method for decoding a digital audio signal, comprising the steps:

- receiving (S110) a transform vector coding a first sequence of samples of the digital audio signal according to transform based coding;

- receiving (S101) a prediction vector coding a second sequence of samples of the digital audio signal according to a coding of CELP type using a long-term prediction;

the method being characterized in that

B. the second sequence begins before the end of the first sequence, a sub-sequence common to the first and second sequences thus being received coded both by the coding of CELP type using a long-term prediction and by the transform based coding;

C1. a) applying (S112) to the transform vector a transform inverse to the transform based coding so as to decode a sub-sequence of the first sequence not coded by coding of CELP type using a long-term prediction;

C2. b) decoding (S114) at least in the prediction vector the sub-sequence common to the first and second sequences at least by a decoding of CELP type using a long-term prediction, based on at least one sample arising from step a);

C3. c) decoding (S115) in the predictive vector by a decoding of CELP type using a long-term prediction a sub-sequence of the second sequence not coded by transform based coding, based on at least one sample arising from one of steps a) and b).

Claim 6:

A. Entity (DECOD) for decoding a digital audio signal, comprising

means (150, 151) for receiving:

- a transform vector (V_T) coding a first sequence of samples of the digital audio signal

according to a transform based coding; and

- a prediction vector (V_P) coding a second sequence of samples of the digital audio signal according to a coding of CELP type using a long-term prediction;

the decoding entity being characterized in that:

B. the second sequence begins before the end of the first sequence, a sub-sequence common to the first and second sequences thus being coded both by coding of CELP type using a long-term prediction and by transform based coding; and in that it furthermore comprises:

C1. a first decoder (152, 153) for applying to the transform vector a transform inverse to the transform based coding so as to decode a sub-sequence of the first sequence not coded by coding of CELP type using a long-term prediction;

C2. a second decoder (154) for decoding at least in the prediction vector the sub-sequence common to the first and second sequences at least by a decoding of CELP type using a long-term prediction, based on at least one sample arising from the first transform based decoder;

and

C3. a third predictive decoder (155) for decoding in the predictive vector by a decoding of CELP type using a long-term prediction a subsequence of the second sequence not [en]coded by transform based coding, based on at least one sample arising from one of the first and second decoders.

The subject matter of the invention in EP'029

13. The Patent concerns the coding and decoding of digital audio signals. The invention is particularly suitable for encoding sounds that alternate between speech and music (§[0002]).

14. Paragraphs [0003] to [0012] in the specification of the patent provide the background of the invention.

15. Audio coding converts sound into a compact digital representation suitable for storage or transmission. The encoded sounds are subsequently reconstructed/decoded into an audible signal during playback. In broad terms, the coding process involves sampling the audio signal, analysing its characteristics and reducing the amount of information to be transmitted by removing or simplifying components that are of limited perceptual importance to the listener.

16. The digital representation of an audio signal is built from elementary units known as samples, which are typically processed in groups referred to as frames. A sample is an individual measurement of the amplitude of the audio signal at a particular instant in time. A frame is a collection of consecutive samples that are processed together as a single unit. Thus, a frame consists of many samples and constitutes the basic processing unit used by many audio coding techniques.

17. Different coding techniques are better suited to different types of audio content. Music and other complex audio signals are commonly encoded using so-called transform-based coding techniques, whereas speech signals are frequently encoded using so-called predictive coding techniques, in particular CELP (Code Excited Linear Prediction). A transform-based codec represents the signal in the frequency domain, while predictive codec models the production of speech in the time domain and predicts future samples from previously reconstructed samples. The overall objective of both approaches is to reduce the amount of data that must be transmitted while preserving satisfactory audio quality.

18. The patent is concerned with situations in which a decoder switches from transform-based coding, typically used for music or complex audio signals, to predictive coding of the CELP type, typically used for speech. Such transitions give rise to a specific technical problem.

19. When digital audio is encoded and later decoded, different mathematical techniques may be employed depending on the nature of the signal. As already noted, music and other complex sounds are generally encoded using transform based techniques, whereas speech is typically encoded using predictive coding techniques of the CELP type.

20. Modern codecs can switch between these coding modes when the signal changes from music-like content to speech-like content and vice versa. It is the transition from transform based coding to predictive coding that lies at the centre of the invention.

21. Transform based coding is highly efficient but has a known limitation. During decoding, the inverse transform generates artefacts commonly referred to as time domain aliasing. Under normal circumstances, these artefacts are not audible because they are cancelled during reconstruction through a process involving overlap between adjacent transform blocks. This mechanism, commonly referred to in the state of the art as overlap add or Time Domain Aliasing Cancellation (TDAC), assumes that another transform coded block follows and participates in the reconstruction process.

22. A transform may be either critically sampled or oversampled. In a critically sampled transform, the number of transform coefficients corresponds to the number of signal samples represented, resulting in a highly efficient coding scheme but also making the handling of aliasing particularly important.

23. CELP decoding operates differently. Rather than reconstructing the signal directly from transform coefficients, the CELP decoder predicts new samples from previously reconstructed samples. For that reason, the quality of the previously decoded samples is critical. If such samples contain residual aliasing or distortion, the prediction process may be adversely affected, resulting in audible degradation of the reconstructed signal.

24. A difficulty therefore arises when the decoder switches directly from transform based decoding to CELP decoding. In that situation, there is no subsequent transform block available to cancel the aliasing present at the end of the transform decoded sequence. The CELP decoder may thus be forced to operate on distorted reference samples.

25. According to the Patent, one known solution consisted in transmitting additional information to the decoder in order to reconstruct clean samples before the transition. The patent describes such approaches as inefficient because they require the transmission of additional data, and suboptimal as far as they do not adopt critically sampled transforms. In particular, paragraph [0008] of the Patent mentions that a prior art solution suffers from insufficient quality when applied to music. This shortcoming stems particularly from the transform based coding.

26. Indeed, the overlapping Fourier transform is not a sample-critical transform, and as a result, it is suboptimal:

*[0008] Cette solution souffre d'une qualité insuffisante sur la musique. Cette insuffisance vient particulièrement du codage par transformée. En effet, la transformée de Fourier à recouvrement n'est pas une transformation à échantillonnage critique, et de ce fait, elle est sous optimale*

In the English translation provided by ORANGE:

*[0008] This solution suffers from insufficient quality when applied to music. This shortcoming stems particularly from the transform based coding. Indeed, the overlapping Fourier transform is not a sample-critical transform, and as a result, it is suboptimal.*

27. At paragraph [0013], the Patent explains that one objective of the invention is to propose a technique for reconstructing an audio signal with good quality by alternating between transform based coding techniques (e.g., critical sampling) and predictive coding techniques (e.g., CELP):

*[0013] Un objet de la présente invention est de proposer une technique permettant de reconstruire un signal audio, avec une bonne qualité, en alternant des techniques de codage par transformée (par exemple à échantillonnage critique) et des techniques de codage prédictif (par exemple de type CELP).*

In English:

*[0013] One objective of the present invention is to propose a technique for reconstructing an audio signal with good quality by alternating between transform based coding techniques (e.g., critical sampling) and predictive coding techniques (e.g., CELP).*

28. For this purpose, the invention proposes a different approach. Rather than creating a clean break between transform based coding and CELP coding, the patent provides for an overlap between the transform coded portion of the signal and the subsequent CELP coded portion. A portion of the signal is encoded twice, once using transform coding and once using CELP coding, as explained in paragraphs [0014]-[0016] of the Patent:

*[0014] « A cet effet, la présente invention concerne un procédé de décodage appliqué après un codage d'un signal numérique audio, ledit codage comportant les étapes :*

*- coder une première séquence d'échantillons du signal numérique audio selon un codage*

*par transformée ;*

*- coder une deuxième séquence d'échantillons du signal numérique audio selon un codage prédictif ;*

*et dans lequel la deuxième séquence commence avant la fin de la première séquence, une sous-séquence commune aux première et deuxième séquences étant ainsi codée à la fois par codage prédictif et par codage par transformée. »*

*[0015] « Ainsi, lors du décodage du signal numérique audio, le repliement créé par le codage dans la sous-séquence de la première séquence peut être supprimé au moyen d'échantillons de cette sous-séquence issus du décodage de la sous-séquence au sein de la deuxième séquence. De plus, la deuxième séquence peut être décodée car les échantillons du passé, utiles au décodage prédictif, ne comportent pas ce repliement.*

*[0016] Avantageusement le codage par transformée est un codage par transformée à échantillonnage critique. »*

In English:

*[0014] To this end, the present invention relates to a decoding method applied after encoding a digital audio signal, said encoding comprising the steps of:*
*- encoding a first sequence of samples of the digital audio signal using transform coding;*
*- encoding a second sequence of samples of the digital audio signal using predictive coding;*
*and wherein the second sequence begins before the end of the first sequence, such that a subsequence common to the first and second sequences is encoded by both predictive coding and transform coding.*

*[0015] Thus, when decoding the digital audio signal, the folding created by the coding in the subsequence of the first sequence can be removed using samples from that subsequence obtained from the decoding of the subsequence within the second sequence. Furthermore, the second sequence can be decoded because the samples-past samples, which are useful for predictive decoding, do not contain this fold.*

29. *[0016] Preferably, the transform coding is critical-sampling transform coding.*

At the decoding stage, the transform coded portion is first reconstructed by applying the inverse transform. The overlap region is then decoded using CELP decoding. According to the teaching of the patent, the CELP decoded version of that overlapping region provides clean reference samples that can subsequently be used as prediction history for decoding the remaining CELP coded portion of the signal. In this manner, the transition from transform based coding to CELP coding can be achieved without relying on the transmission of additional correction data.

30. Referring to Figure 10 of the Patent, sequence SEQ1 is transform coded, sequence SEQ2 is CELP coded, and the common region S SEQ is encoded using both techniques. Three subsequences are thus defined:

- S-SEQ1, coded only by transform coding;
- S-SEQ, coded both by transform coding and CELP coding; and
- S-SEQ2, coded only by CELP coding.

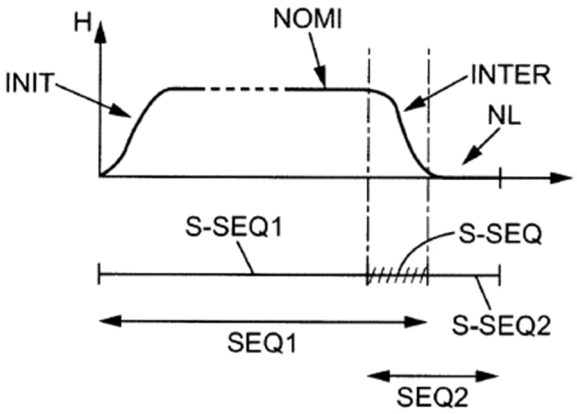
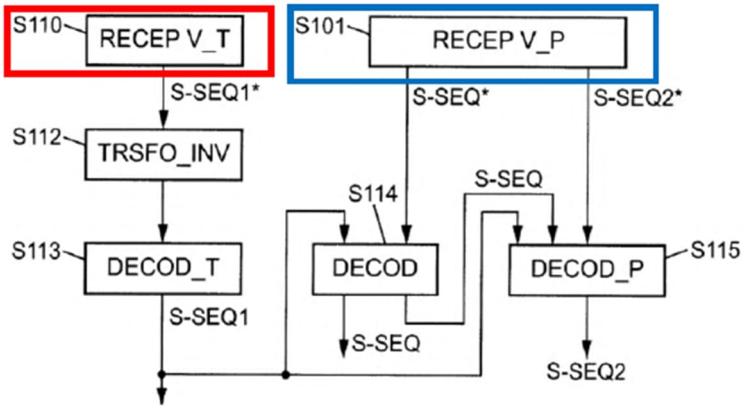



FIG. 10

31. In simplified terms, the invention uses the common region S-SEQ as a bridge between the two decoding modes. By decoding that region using both techniques and relying on the CELP decoded version when initiating predictive decoding, the patent seeks to ensure a smooth transition between transform coding and CELP coding without audible artefacts and without transmitting additional transition information.

32. Figure 11, shown below in the annotation by ORANGE (SoC, MN 60), illustrates the corresponding decoding process. The transform coded portion S-SEQ1* is decoded by inverse transform decoding to obtain S-SEQ1. The overlapping portion S-SEQ* is decoded using CELP decoding, which relies on samples already reconstructed in the preceding step. Finally, the CELP only portion S-SEQ2* is decoded using a prediction history derived from the previously reconstructed samples. Whether Feature C3 requires reliance on samples arising from either or both of the preceding steps is examined further below in connection with the interpretation of claim 1.




Patent-in-suit, figure 11 (highlights added)

THE ALLEGED INFRINGING PRODUCTS

33. ORANGE alleges that HMD smartphones and tablets running Android 9 or higher infringe EP'029 because those devices are required to implement a standardised audio decoder called USAC (Unified Speech and Audio Coding), which, according to the Claimant, necessarily uses the patented decoding method.

PARTIES' REQUESTS

34. *Concerning the Infringement action:*

ORANGE requests that HMD be ordered:

-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 and the Republic of Italy entities (DECOD), in particular smartphones or tablets that use Android OS version 9 or higher and make use of the USAC standard, for decoding a digital audio signal, as comprising the means recited in Claim 6 (Direct infringement of Claim 6).

-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, means, namely smartphones and tablets that use Android OS version 9 or higher and make use of the USAC standard, that make use of a method decoding a digital audio signal, as comprising the steps recited in claim 1 (Indirect infringement of Claim 1).

ORANGE further requests:

- corrective measures: recall the infringing products from the channels of commerce and destruction

-communication of information (origin and distribution channels, quantities, identity of third persons, advertising operations, cost factors and profits)

-interim award of 219k Euros of damages

-obligation to pay compensation for all damages (acts committed since 22 May 2015)

-publication of the decision

- under penalties

-costs of the proceedings (cf agreement on the amount between the parties after the Interim Conference)

-in the event of a security to be paid by the Claimant (cf amounts proposed by the Claimant IV -F in the SoC).

HDM requests that the claims be dismissed, arguing that its products do not infringe the Patent.

*35. Concerning the Counterclaim for revocation:*

HMD requests:

I. EP029 is revoked in the scope of claims 1 and 6 with effect in the Federal Republic of Germany, the French Republic and the Republic of Italy, and

II. That the Claimant shall bear the costs of the revocation proceedings.

ORANGE requests that:

- Defendant's Counterclaim for revocation is rejected, and EP'029 is upheld as granted.

- Defendant's Counterclaim for revocation is rejected insofar as it exceeds the version of the patent EP 2 345 029 according to Auxiliary Request 1 (AR1), and in the alternative, AR2 to AR 9.

- to grant the claims as set out in the Statement of claim for infringement of the Patent and as amended in the Reply to the Statement of Defense, with the provision that claims 6 and 1, as reproduced therein, are to be drafted in accordance with the auxiliary request deemed legally valid by the Court.

*36. Concerning the Exhaustion of the Rights and the FRAND defence from HMD*

-According to HMD, all claims in dispute are exhausted with respect to the attacked embodiments

-the assertion of ORANGE's claims in the present dispute constitutes an abuse of the claimant's dominant market position; the FRAND objection must lead to the dismissal of the infringement action filed by ORANGE.

GROUNDS FOR THE DECISION

**I. Jurisdiction and competence**

37. EP'029 has not been opted out. It has been validated in several UPC contracting member states, including France, where it is still in force.

38. The alleged acts of infringement are committed in France, as it is not disputed that the allegedly infringing products are being offered on French territory. The Paris Local Division of the UPC therefore has jurisdiction and competence to hear this infringement action, pursuant to Art. 33(1) a) UPCA, in combination with Art. 7.2 Brussels Regulation I bis ("BR I").

**II. Claim construction**

*Skilled person*

39. In its Statement of Defence (SoD), Section 2, the Defendant submits that the person skilled in the art has a Master's degree in electrical engineering and/or information technology, combined with several years of professional experience in the field of speech and audio coding. According to the Defendant, such person is familiar with the speech and audio coding standards known at the priority date, including AMR, AMR WB, AMR WB+, AAC and similar standards. The Defendant further contends that the skilled person actively participates in the standardisation process for audio coding and takes part in relevant working-group meetings and technical discussions.

40. In its Reply to the SoD, Sections 8 and 9, the Claimant accepts the basic profile of an experienced audio coding engineer but disputes the additional requirement that the skilled person actively participates in the standardisation process. According to the Claimant, this would attribute to the skilled person qualifications and experience exceeding those of the

notional person skilled in the art. The Claimant therefore defines the skilled person as a person holding a Master's degree in electrical engineering and/or information technology and having several years of experience in the field of speech and audio coding.

41. The Court considers that the disagreement between the parties is of limited relevance for the issues to be decided in the present case. The case primarily concerns the technical teaching of the patent and the operation of the USAC standard. Both parties appear to accept that these matters would be understood by an experienced engineer working in the field of speech and audio coding, irrespective of whether that person is assumed to have participated actively in standardisation activities.

42. The Court therefore considers the skilled person to be an engineer with several years of experience in the field of speech and audio coding, familiar with the coding techniques and standards relevant at the priority date.

***Presentation of the features of Claim 1***

43. The principles applicable to claim construction have been set out by the Court of Appeal of the UPC in its final order in UPC_CoA_335/2023 (26 February 2024, NanoString v 10x Genomics, as rectified; see also CoA UPC_CoA_1/2024, 13 May 2024, VusionGroup v Hanshow; UPC_CoA_768/2024, 30 April 2025, Insulet v. EOFlow). A patent claim is not only the starting point but the decisive basis for determining the protective scope of a European patent under Art. 69 EPC in conjunction with the Protocol on the Interpretation of Art. 69 EPC. The interpretation of a patent claim does not depend solely on the strict, literal meaning of the wording used. Rather the description and the drawings must always be used as explanatory aids for the interpretation of the patent claim and not only to resolve any ambiguities in the patent claim. A patent claim must always be interpreted from the perspective of a skilled person. The skilled person always interprets the features of a claim in the light of the claims as a whole (UPC_CoA_1/2024, 13 May 2024, VusionGroup v Hanshow; UPC_CoA_ 768/2024, 30 April 2025, Insulet v EOFlow, UPC_CoA_646/2024, 25 November 2025, Meril v Edwards). These principles for interpreting a patent claim apply both to the question of patent infringement and to the question of validity (NanoString v 10x Genomics).

44. The construction of claim 1 is set out below.

Feature A

"*A. Method for decoding a digital audio signal, comprising the steps:*

*- receiving (S110) a transform vector [en]coding a first sequence of samples of the digital audio signal according to transform based coding;*

*- receiving (S101) a prediction vector [en]coding a second sequence of samples of the digital audio signal according to a coding of CELP type using a long-term prediction;*

*the method being characterized in that*"

45. The claim requires that the decoder receives a transform vector encoding a first sequence of samples (SEQ1), and a prediction vector encoding a second sequence of samples using CELP with long-term prediction (SEQ2).

46. This feature establishes the general framework of a hybrid codec combining transform based coding and CELP coding. Although Feature A does not expressly mention critical sampling, the description consistently discusses the invention in the context of critically sampled transform coding. The Patent explains that critically sampled transforms provide efficiency advantages but give rise to aliasing effects that cannot be cancelled in the usual manner when decoding switches from transform based coding to CELP coding. It is precisely this problem that the invention seeks to solve. The description repeatedly refers to critically sampled transforms and identifies them as the preferred transform coding technique underlying the invention. Paragraph [0005] defines a critically sampled transform as a transform for which the number of coefficients in the transformed domain corresponds to the number of coefficients in the digitised signal. Read in the light of the description as a whole, the skilled person would therefore understand that the transform coding referred to in Feature A is not any transform coding whatsoever, but transform coding based on critically sampled transforms.

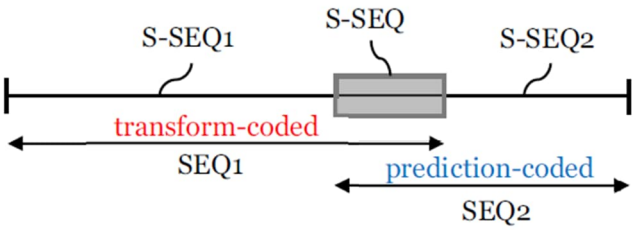
Feature B

47. "B. *the second sequence (SEQ2, blue) begins before the end of the first sequence (SEQ1, red), a sub-sequence common to the first and second sequences (S-SEQ, orange) thus being receive coded both by the coding of CELP type using a long-term prediction and by the transform based coding*;"

48. Feature B requires that the second sequence, SEQ2, which is prediction coded, begins before the end of the first sequence, SEQ1, which is transform coded. As a result, a common sub sequence, S SEQ, belongs to both SEQ1 and SEQ2.

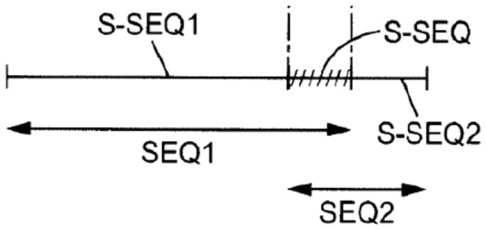
49. This common sub sequence is therefore encoded twice: once by transform based coding and once by prediction based (CELP) coding.

50. As will become apparent from the analysis of Features C1 and C2 below, the fact that SEQ2 begins before the end of SEQ1 necessarily creates a temporal overlap between the two sequences. The arrangement may be illustrated as follows (illustration by ORANGE, SoC MN 71 and MN 72):




Overlap between the first and second sequences

which is a simplified outtake from figure 10 of the patent-in-suit:

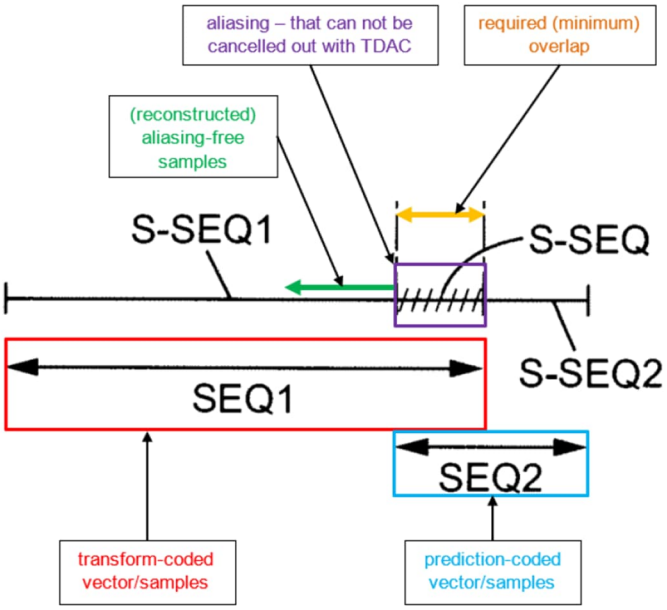



51. Since SEQ2 begins before the end of SEQ1, a common sub-sequence S-SEQ is created. This also implies the existence of a sub-sequence S-SEQ1 within SEQ1 that is not shared with SEQ2, and of a sub-sequence S-SEQ2 within SEQ2 that is not shared with SEQ1 (Patent, para. [0169]).

52. Furthermore, Feature B establishes a temporal order between the two sequences. SEQ1 occurs first, while SEQ2 begins before the end of SEQ1. Since SEQ1 is transform coded and SEQ2 is CELP coded, the feature implies a transition from transform based decoding to prediction-based decoding.

53. The skilled person understands that the Patent can only achieve its alleged technical effect if the overlap between the transform coded and prediction coded sequences extends over a sufficient number of samples.

54. HMD submits that only an overlap covering all the samples at the end of the transform coded sequence, where aliasing would otherwise arise during transform decoding and could no longer be cancelled through ordinary Time Domain Aliasing Cancellation (TDAC), would solve the technical problem addressed by the patent. HMD illustrated its position in Section 2.48 of its SoD by means of the following figure (SoD MN 2.22):




55. The Court agrees with that interpretation; the overlap region contains the samples potentially affected by aliasing, whereas the transform decoded samples preceding the start of the CELP coded sequence may be used as the "past samples" required to initialise the CELP decoder.

Feature C1

56. "*C1. a) applying (S112) to the transform vector a transform inverse to the transform based coding so as to decode a sub-sequence of the first sequence not coded by coding of CELP type using a long-term prediction*;"

57. This feature recites that S-SEQ1, i.e. the part of the transform coded first sequence that is not also coded by CELP, is decoded by inverse transformation. S-SEQ1 is a sub-sequence, which is part of SEQ1. This step is conventional transform based decoding.

Feature C2

58. "*C2. b) decoding (S114) at least in the prediction vector the sub-sequence common to the first and second sequences at least by a decoding of CELP type using a long-term prediction, based on at least one sample arising from step a);"*

59. Feature C2 requires that the common sub-sequence S SEQ, which was encoded on the encoder side both by transform coding and by CELP coding, be decoded using CELP decoding with long-term prediction. Such CELP decoding must be performed "based on at least one sample arising from step a)", i.e. on at least one sample obtained through the transform decoding performed under Feature C1.

60. In practical terms, Feature C2 concerns the initialisation and operation of the CELP decoder during the transition from transform based coding to CELP coding. Since CELP decoding with long-term prediction relies on previously reconstructed samples, the decoder must have access to suitable "past samples" before it can decode the common sub-sequence S SEQ.

61. The description makes it clear that CELP decoding cannot reliably operate using aliased past samples. According to the teaching of the Patent, the purpose of the overlap between the transform coded and CELP coded sequences is precisely to ensure that the CELP decoder is initialized using transform decoded samples that are free of the aliasing effects that would otherwise arise at the end of a critically sampled transform coded sequence.

62. According to the Court, the skilled person therefore understands the expression "based on at least one sample arising from step a)" as referring to samples obtained directly from the transform decoding of Feature C1 and used as input to the CELP decoder. In the context of the technical teaching of the patent, those samples must be suitable for CELP prediction and must therefore be free from the aliasing artefacts. The patent does not describe a mechanism whereby aliased samples are first reconstructed and subsequently corrected through the transmission of additional information; rather, the overlap between the two coding modes is presented as the means by which suitable past samples are made available to the CELP decoder.

63. The wording "at least one sample" cannot, in the Court's view, be understood literally as requiring only a single sample. A person skilled in the art would immediately recognise that a CELP decoder employing long-term prediction cannot be meaningfully initialised from an isolated sample. Read in its technical context and in light of the problem addressed by the patent, the expression is understood as requiring a sufficient number of transform decoded samples to permit proper operation of the CELP decoder and to ensure that the transition from transform based coding to CELP coding occurs without the aliasing effects that the invention seeks to eliminate.

Feature C3

*64. "c) decoding (S115) in the predictive vector by a decoding of CELP type using a long-term prediction a subsequence of the second sequence not coded by transform based coding, based on at least one sample arising from one of steps a) and b)."*

65. The feature recites that CELP decoding continues beyond the overlap, using earlier samples. It refers to the decoding of S-SEQ2 (purple line below), which had been coded using CELP only.

66. This feature concerns the decoding of S-SEQ2, i.e. the portion of the second sequence SEQ2 that is coded exclusively by CELP and does not overlap with the transform coded sequence. Once CELP decoding has been initiated for the common sub-sequence S-SEQ under Feature C2, Feature C3 extends the same CELP decoding process to the remainder of SEQ2.

67. In practical terms, Feature C3 describes the continuation of the CELP decoding operation beyond the overlap region. The CELP decoder relies on previously reconstructed samples as predictor history and therefore continues decoding S-SEQ2 using samples that arise either from step a) (transform decoding) or from step b) (CELP decoding of the common sub-sequence).

68. Accordingly, Feature C3 concerns the decoding of the non-overlapping portion of the second sequence, S-SEQ2, using CELP long-term prediction based on samples previously reconstructed through steps a) and/or b). The feature thus reflects the continuation of a single CELP decoding process that has already been initialized during the decoding of the overlap region.

69. The wording "based on at least one sample arising from one of steps a) and b)" raises certain interpretative questions. Read literally, it appears to allow the CELP decoding of S-SEQ2 to rely exclusively on samples arising from step a), exclusively on samples arising from step b), or on a combination of samples arising from both steps. However, the technical teaching of the patent appears to be directed to a decoding process in which the CELP decoder is progressively initialized through the overlap region and then continues operating on the basis of the CELP decoded history generated during step b).

70. In this respect, ORANGE stated (Rejoinder to the reply to the defence to the counterclaim and reply to the defence to the application to amend the patent, MN 170 and M199) that the inverse transform output from step (a) covers a sufficient non-aliased region to serve as initialization history for the CELP decoder in step (b), which in turn feeds step (c)".

71. The Court considers that this interpretation is consistent with the technical teaching of the patent as a whole as understood by the skilled person.

Concerning Claim 6

72. The interpretation of the features of claim 1 applies equally to claim 6, which recites the same technical teaching in the form of a decoding entity.

INFRINGEMENT

73. ORANGE submits that the accused HMD smartphones implement the USAC standard and that a compliant implementation of that standard necessarily performs all the steps of claims 1 and 6 of the Patent. According to ORANGE, the transition from transform based decoding to CELP decoding in USAC includes an overlap between the transform coded sequence and the prediction coded sequence corresponding to Feature B, and the subsequent CELP decoding steps correspond to Features C2 and C3. The Claimant further argues that the use of Forward Aliasing Cancellation ("FAC") does not affect this conclusion, as FAC is signalled through an optional flag and, in any event, merely constitutes an additional processing tool that does not alter the implementation of the claimed decoding structure

*Burden of proof*

74. The burden of proving infringement rests on the Claimant. It is therefore for ORANGE to establish that the accused products implement all features of the asserted claims, either by direct use or by indirect use of the invention.

*Transition from frequency-domain decoding to ACELP decoding*

75. In the USAC standard, transform based coding is commonly referred to as frequency-domain ("FD") coding. The central issue in the present case concerns the manner in which

the USAC standard handles the transition from frequency domain ("FD") decoding to ACELP decoding. The USAC standard does not contain a simple and immediately intelligible figure showing, in a straightforward manner, how the transition from transform based decoding to ACELP decoding is performed. The alleged implementation of Features B, C2 and C3 therefore requires the reconstruction of the decoding process from various provisions of the standard.

Table 133 of USAC shows the allowed windowed sequences according to the standard.

**Table 133 — Allowed Window Sequences**

| Window Sequence<br>From ↓ To → | ONLY_LONG_SEQUENCE | LONG_START_SEQUENCE | EIGHT_SHORT_SEQUENCE | LONG_STOP_SEQUENCE | STOP_START_SEQUENCE | LPD_SEQUENCE |
|---|---|---|---|---|---|---|
| ONLY_LONG_SEQUENCE | ☑ | ☑ | | | | |
| LONG_START_SEQUENCE | | | ☑ | ☑ | ☑ | ☑ |
| EIGHT_SHORT_SEQUENCE | | | ☑ | ☑ | ☑ | ☑ |
| LONG_STOP_SEQUENCE | ☑ | ☑ | | | | |
| STOP_START_SEQUENCE | | | ☑ | ☑ | ☑ | ☑ |
| LPD_SEQUENCE | | | ☑ | ☑ | ☑ | ☑ |

76. ORANGE proposes a construction of the USAC codec according to which the claimed overlap between the transform coded sequence and the CELP coded sequence is realised during a transition involving an ONLY_LONG sequence, a LONG_START sequence and a subsequent LPD_SEQ sequence (see Figure below, annotated by Orange, Reply to SoD, MN 85). According to ORANGE, this transition satisfies the temporal overlap required by Feature B and provides the samples required for the implementation of Features C2 and C3.

**Table 133 — Allowed Window Sequences**

| Window Sequence<br>From ↓ To → | ONLY_LONG_SEQUENCE | LONG_START_SEQUENCE | EIGHT_SHORT_SEQUENCE | LONG_STOP_SEQUENCE | STOP_START_SEQUENCE | LPD_SEQUENCE |
|---|---|---|---|---|---|---|
| ONLY_LONG_SEQUENCE | ☑ | ☑ | | | | X |
| LONG_START_SEQUENCE | | | ☑ | ☑ | ☑ | ☑ |
| EIGHT_SHORT_SEQUENCE | | | ☑ | ☑ | ☑ | ☑ |
| LONG_STOP_SEQUENCE | ☑ | ☑ | | | | |
| STOP_START_SEQUENCE | | | ☑ | ☑ | ☑ | ☑ |
| LPD_SEQUENCE | | | ☑ | ☑ | ☑ | ☑ |

77. ORANGE maintains that the USAC standard necessarily implements the method claimed in the Patent. As regards Feature B, ORANGE contends that USAC contains a temporal overlap between the transform coded sequence and the CELP coded sequence. The fact that the CELP coded sequence begins before the end of the transform coded sequence results in the common sub-sequence required by the claim.

78. With respect to Feature C1, ORANGE submits that USAC necessarily performs inverse transform decoding of the transform only portion of the sequence before the CELP decoder is activated. The resulting non overlapping transform decoded samples correspond to the sub-sequence decoded in step (a).

79. Regarding Feature C2, ORANGE argues that the overlap region is decoded by CELP using previously reconstructed samples obtained from the transform decoded portion of the sequence. In ORANGE's view, this corresponds directly to the requirement that CELP decoding of the common subsequence be based on samples arising from step (a).

80. As to Feature C3, ORANGE argues that CELP decoding then continues into the remaining CELP only portion of the signal using the history generated during the preceding decoding steps. Orange therefore considers that the USAC decoder necessarily performs the continuation of CELP decoding envisaged by the claim.

Reference is made to the following representation (Orange, Reply to SoD, MN 96):


81. HMD contests that interpretation. HMD points out that, within USAC, the term LPD does not necessarily refer to ACELP. ACELP is merely one of the coding modes that may be used within the broader LPD framework, where MDCT-based TCX, a different technique that uses a transform, also falls under LPD. According to HMD, ORANGE's construction therefore assumes a particular implementation path and does not establish that the standard necessarily performs the claimed method whenever a transition occurs.

82. More importantly, HMD submits that, when a transition from FD decoding to ACELP decoding actually takes place, the standard mandatorily relies on Forward Aliasing Cancellation ("FAC"). On HMD's reading of the standard, FAC is not an incidental option but the mechanism by which aliasing effects arising at the transition are addressed in USAC.

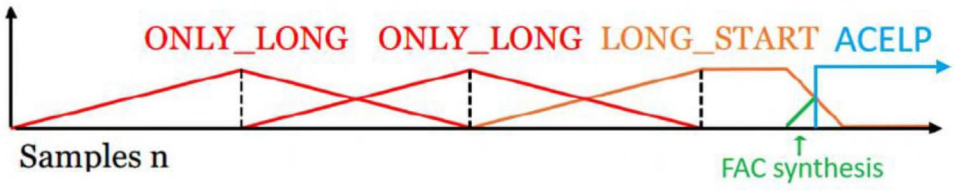
83. Reference is made to section 7.16.1 of USAC which describes

"*forward-aliasing cancellation (FAC) operations which are performed during transitions between ACELP and transform coded frames (TC) in order to get the final synthesis signal. The goal of FAC is to cancel the time-domain aliasing and windowing Introduced by TC and which cannot be cancelled by the preceding or following ACELP frame. Here the notion of TC includes MDCT over long and short blocks (in FD mode) as well as MDCT-based TCX (in LPD mode)*".

84. Additionally, section 7.14.4 of USAC appears to mandate use of FAC when transitioning form FD to ACELP:

"*in case of a transition from FD to ACELP, the past excitation buffer […] and the buffer containing the past pre-emphasized synthesis […] are updated using the past FD synthesis (including FAC)*"

85. Accordingly, HMD submits that a correct construction/interpretation would therefore lead to the following representation, which includes FAC synthesis to overcome aliased samples present in the down-ramp section of the LONG_START sequence, which is not entirely coded both in the TD domain and by ACELP (Rejoinder, MN 3.11 c), page 29):




*The role of the FAC (Forward Aliasing Cancellation) tool*

86. In this respect, a substantial part of the parties' discussion concerned the role of FAC. ORANGE relies on the fact that FAC is signalled by a dedicated flag, i.e. a parameter contained in the bitstream that informs the decoder whether the FAC tool is to be used for a particular transition. According to ORANGE, the existence of such a flag demonstrates that FAC is not an indispensable element of every transition, i.e. that is optional in USAC: it follows that USAC may be implemented without relying on FAC and may still perform the method of claim 1.

87. The Court is not convinced by this argument. The relevant question is not whether the standard contains a signalling flag such that use of the FAC is optional, but whether, the decoding path relied upon by Orange is shown to achieve the technical result contemplated by the Patent.

88. If it is assumed that FAC is not used in USAC, ORANGE has not convincingly shown that the transition can be performed while maintaining the quality objectives of the standard using the claimed invention.

89. Assuming that FAC is used in USAC, ORANGE's argument that the claims do not exclude the presence of additional processing tools and do not require that the overlap mechanism is the sole contributor to signal quality, and thus the invention can still be implemented, is not convincing (and not substantiated). ORANGE submits that the use of FAC is immaterial because the information transmitted for FAC purposes does not constitute additional transform coded data and therefore does not compromise the efficiency considerations discussed in the patent. This reasoning is not accepted.

90. The patent presents its solution as avoiding the transmission of additional information in order to address aliasing effects at the transition between transform based (FD) coding and CELP coding.

In particular, paragraph [0148] criticises approaches that rely on transmitting additional information to resolve the transition problem:

*[0148] Pour régler ces difficultés, l'art antérieur propose de communiquer au décodeur les échantillons dont il a besoin en plus des vecteurs issues de la transformée et de la partie prédiction. Néanmoins, cette solution n'est pas optimale du point de vue du débit"*

English translation submitted by ORANGE:

91. *[0148] To address these difficulties, the prior art proposes providing the decoder with the samples it needs in addition to the vectors derived from the transform and the prediction component. However, this solution is not optimal in terms of throughput.*

92. It is true that paragraph [0148] refers to transmission of additional transform coded data, but interpreting the claims in light of the description, the skilled person understands the patent as ensuring a transition from transform based decoding to CELP decoding while providing the CELP decoder with an alias-free prediction history, without resorting to the transmission of additional information intended to correct aliasing effects. Therefore, the Court considers that a solution requiring the transmission of any additional data goes against the teaching of the patent and is not encompassed in the scope of the claim. In other words, an implementation that transmits additional data, as it is the additional data required by FAC, cannot be ignored or treated as equivalent to the solution described in the patent.

93. The Court therefore reaches the same conclusion irrespective of whether FAC is assumed to be absent or present in the relevant USAC transition. In the former case, ORANGE has not established that the claimed technical effect is achieved; in the latter case, the transition relies on additional corrective information that is inconsistent with the technical teaching of the Patent.

*Conclusion on infringement*

94. In view of the above, ORANGE fails to prove that the USAC decoder necessarily performs the claimed transition from frequency domain decoding to ACELP decoding, in particular features B, C2 and C3, are not disclosed.

95. On the contrary, the material before the Court indicates that the transition in USAC is achieved through the FAC mechanism, with transmission of additional transition information. That mechanism differs fundamentally from the technical teaching that the Court derives from claim 1 when interpreted in the light of the description, namely the use of overlap and CELP initialisation based on alias free samples obtained without resorting to additional data containing corrective information.

Therefore, the infringement based on Claim 1 is not established.

96. For the same reasons, the infringement based on Claim 6, which recites the same technical teaching in the form of a decoding entity, is not established.

97. Since the infringement action fails, all claims based upon the alleged infringement must be dismissed.

*Conclusion on the other requests:*

98. In light of these elements, it is not necessary to decide the counterclaim for revocation or the parties' remaining disputes concerning validity, exhaustion, FRAND, proportionality, or the other subsidiary requests submitted by the parties.

THE COSTS

99. In accordance with R. 118.5 RoP, the Court decides, in principle, that since ORANGE has failed in its claim for infringement of the Patent EP'029, it shall bear the costs of the proceedings in accordance with Article 69 of the UPCA. The Court notes that the parties have reached an agreement (Exhibit HL 5, which is declared confidential under R. 262.2 and R. 262A RoP) regarding the costs amount; therefore, a decision on the costs is not required.

DECISION

The Court:

1- Notes that HMD made its counterclaim for revocation conditional;
2- Dismisses ORANGE's infringement action based on its Patent EP'029,
3- Orders ORANGE to bear the costs of the proceedings, in accordance with the parties' agreement.
4- Notes that a further decision on the costs is not required.

Issued in Paris, on 19 August 2026.

Presiding judge and Judge-rapporteur, Camille Lignières

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On behalf of Legally qualified judge, Carine Gillet

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Legally qualified judge, Margot Kokke


Technically qualified judge, Alessandro Sanchini


For the Deputy Registrar


**Information about appeal**

An appeal against the present Decision may be lodged at the Court of Appeal, by any party which has been unsuccessful, in whole or in part, in its submissions, within two months of the date of its notification (Art. 73(1) UPCA, R. 220.1(a), 224.1(a) RoP).

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

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

*DECISION DETAILS*
Date of issue: 19 August 2026
UPC numbers: UPC_CFI_301/2025
Related proceedings: UPC_CFI_713/2025
Action type: Infringement Action with counterclaim for revocation