

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMAZON.COM, INC., AMAZON.COM SERVICES, LLC,

Petitioner

v.

NOKIA TECHNOLOGIES OY,

Patent Owner

Case: IPR2024-00920
U.S. Patent No. 8,077,991

AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

I. INTRODUCTION

The Board correctly found Petitioners did not establish a reasonable likelihood of prevailing in proving the unpatentability of at least one challenged claim of the '991 Patent. The Board's decision was based, in part, on Petitioners' mapping of the same aspect of Koga (prediction error residual) to the claim terms "spatial samples" and "spatial information," which have different meanings in the art. The Request does not contest spatial samples and spatial information cannot refer to the same thing. Petitioners fail to show the Board erred because the Petition points to the same thing for both "spatial samples" and "spatial information."

For spatial samples, the Petition points to the "residual of the prediction error," which is input to an entropy encoding process. (Request at 7; Pet. at 37-38.) For spatial information, the Petition points to the entropy decoded residual of the prediction error. (Request at 5-6). The input to Koga's entropy encoding process is identical to the output of Koga's entropy decoding process. Pet. at 13. Therefore, Petitioners are pointing to the same prediction error residual for both spatial samples and spatial information (first before the prediction error residual is entropy encoded by an encoder and then when it is entropy decoded by a decoder).

Petitioners cite to testimony from Patent Owner's expert in an ITC Investigation. First, Petitioners' citations are cherry-picked. Second, the expert, Dr.

Michael Orchard¹, has—in both proceedings—consistently explained Koga only receives spatial information and does not receive spatial samples that it decodes into spatial information. The Petition takes a different approach, alleging that Koga receives spatial samples. The problem with the Petition’s approach, as the Board correctly determined, is the Petition must then point to the same thing for both spatial samples and spatial information. Dr. Orchard’s testimony does not change this.

II. ARGUMENT

A. The Board Correctly Found that Petitioner Mapped “spatial samples” and “spatial information” to the same thing.

Petitioners’ Request overlooks the inconsistency in the Petition’s treatment of “receiving a coded prediction error signal, the coded prediction error signal including ... a plurality of spatial samples” in limitation 22a and “decoding, by a processor, the plurality of spatial samples into decoded spatial information” in 22c. The Board found the Petition mapped “both spatial samples and spatial information to the residual of the prediction error.” Dec. at 16 (citing Pet. at 37, 44). However, “because spatial samples and spatial information cannot refer to the same thing,” the Board concluded “they cannot both be the residual of the prediction error.” *Id.*

In discussing 22a, the Petition states “[a] POSITA would have understood that the residual of the prediction error is a plurality of spatial samples.” Pet. at 37.

¹ Petitioners erroneously identify Patent Owner’s expert as “Dr. Richard Orchard.”

Following this, the Petition argues “Koga teaches that the residual of the prediction error (the output of subtracter 19) is quantized (at 17) and sent to code converter 26. Ex-1004, 5:16-19. [...] the quantized residual of the prediction error is entropy coded (by encoder 261) and multiplexed into signal 3000.” *Id.* at 38 (citing Koga’s Figure 4). That is, the Petition maps spatial samples to the residual of the prediction error (which is input to an entropy encoder) to satisfy limitation 22a.

The Petition’s treatment of limitation 22c contradicts this. The Petition alleges “[a] POSITA would have understood that decoding the residual in this manner results in a decoded version of the spatial information that was encoded at the encoder, therefore producing **decoded spatial information.**” Pet. at 44 (emphasis original). Thus, the Petition alleges what Koga’s encoder entropy encodes (i.e., the residual of the prediction error) and what the decoder receives and entropy decodes (i.e., the residual of the prediction error) is **both** the claimed “spatial samples” and “spatial information.” This cannot be, as the Board correctly determined.

The Request makes a semantic argument regarding whether the Board misread “i.e., the residual of the prediction error” to mean the decoder produces the residual of the prediction error. However, the Petition acknowledges the input to an entropy encoder and the output of an entropy decoder are the same thing. Pet. at 13 (entropy coding “encodes multiple values as a single unit (an interval) and decodes the same encoded values from each single unit (interval)”). Nonetheless, the Petition

repeatedly takes the position that the input to the entropy encoder is “spatial samples.” Pet. at 35, 37. If spatial samples are input to the entropy encoder, then necessarily spatial samples are the output of the entropy decoder. The output of the entropy decoder cannot also be spatial information.

B. The Citations to Dr. Orchard’s Testimony are Misleading.

Dr. Orchard’s testimony is consistent across the ITC Investigation and this proceeding. In Dr. Orchard’s view, Koga never receives spatial samples that it decodes into spatial information. That is, Koga only involves spatial information (and not spatial samples). The difference between Dr. Orchard’s understanding and the Petition is the Petition contends Koga sends and receives spatial samples, which are the same as what the Petition identifies as spatial information. Dr. Orchard testified as follows on the ’991 Patent compared to Koga:

Q: And how is this [spatial samples being used to decode spatial information] reflected in the claims?

A: The wording of the claims says that we need to decode by a processor the plurality of spatial samples into the decoded spatial information.

On the right is the decoded spatial information which is the form of the spatial component of this representation, which is of a size block and that is suitable for adding to the transform information and the prediction in order to create the decoded block.

[...]

Q: What does the decoder in Koga receive?

A: Koga receives the block of spatial samples, which is spatial information. And because of that, it does not practice the step on the bottom. It never decodes. It never needs to decode because it never sends an individual spatial sample. It sends only a block of spatial samples, so it never decodes spatial samples into spatial decoded spatial information.

Certain Video Capable Elec. Devices, Inv. No. 337-TA-1380, Hearing Tr. at 1679:15-1680:13.

The testimony cited in the Request does not contradict this testimony or remedy the Petition's reliance on the same aspects of Koga to satisfy "spatial samples" and "spatial information." Indeed, Petitioners omit the next part of Dr. Orchard's testimony that clarifies his opinion:

Q: By your own diagram Koga has – receives the coded – receives a coded prediction error signal with spatial samples and it entropy decodes an output spatial information, right?

A: Yes, I agree.

Q: Okay. You show no additional decoder for that bottom line, right?

A: There is no step in Koga or needed in Koga in decoding a collection of spatial samples into spatial information. What is received is spatial information.

III. CONCLUSION

The Board did not error in its determination to not institute. Petitioner's Request for Review glosses over the Petition's contradictory treatment of Koga and mischaracterizes testimony from the ITC Investigation. Patent Owner respectfully requests the Director to deny Petitioner's request.

Dated: March 14, 2025

Respectfully submitted,

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CERTIFICATION OF SERVICE

The undersigned hereby certifies that the foregoing **AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST** has been served on Petitioner via email on the following counsel of record for Petitioner:

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Dated: March 14, 2025

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