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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* DETLEF KOLL and MICHAEL FINKE

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Appeal 2010-008396  
Application 11/766,780  
Technology Center 2600

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Before ALLEN R. MacDONALD, JASON V. MORGAN, and  
JOHN G. NEW, *Administrative Patent Judges*.

NEW *Administrative Patent Judge*.

DECISION ON APPEAL

## SUMMARY

Appellants file this appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1-5, 9-19, 23-29, and 34-47 as unpatentable under 35 U.S.C. § 103(a) as being obvious over the combination of Heinze et al. (US 6,915,254 B1, July 5, 2003) ("Heinze") and Iliff (US 2008/0059232 A1, March 6, 2008) ("Iliff").<sup>1</sup>

We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

## STATEMENT OF THE CASE

Appellants' invention is directed to a computer-implemented method wherein speech is transcribed to produce a transcript; at least some of the text in the transcript is encoded as data. These codings may be verified for accuracy and corrected if inaccurate and the resulting transcript is provided to a decision support system to perform functions such as checking for drug-drug, drug-allergy, and drug-procedure interactions, and checking against clinical performance measures (such as recommended treatments). Alerts and other information output by the decision support system are associated with the transcript. The transcript and associated decision support output are provided to a physician to assist the physician in reviewing the transcript and in taking an appropriate action in response to the transcript. Abstract.

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<sup>1</sup> Claims 6-8, 20-22, and 30-33 were canceled prior to the instant appeal. App. Br. 46, 50, 52.

## GROUPING OF CLAIMS

Appellants argue that the Examiner rejected claims 1-5, 9-15, 18, 19, 23, 24, 27-29, and 34-47 for substantially the same reasons, and we therefore select claim 1 as representative. App. Br. 29. Claim 1 recites:

Claim 1. A computer-implemented method comprising:

- (A) applying an automatic speech recognizer to a spoken audio stream to produce a first document including first codings associated with text in the first document;
- (B) providing the first document to an automatic decision support system;
- (C) receiving, from the automatic decision support system, decision support output derived from the first document;
- (D) verifying accuracy of the first document to produce a verified document; and
- (E) transmitting to a recipient the verified document and the decision support output.

App. Br. 45.

Appellants argue that the Examiner rejected claims 16 and 25 for substantially the same reasons, and we therefore select claim 16 as representative. App. Br. 29. Claim 16 recites:

Claim 16. The method of claim 15, wherein (B) comprises determining whether the first document indicates at least one of a drug-drug, drug-allergy, and drug-procedure interaction.

App. Br. 49.

Appellants argue that the Examiner rejected claims 17 and 26 for substantially the same reasons, and we therefore select claim 17 as representative. App. Br. 30. Claim 17 recites:

Claim 17. The method of claim 15, wherein (B) comprises determining whether the first document indicates satisfaction of a clinical performance measure.

App. Br. 49.

## ISSUES AND ANALYSES

### Claim 1

#### *Issue 1*

Appellants argue that the Examiner erred in finding that the combination of Heinze and Iliff teaches or suggests the limitation of claim 1 reciting “providing the first document to an automatic decision support system.” App. Br. 34. We therefore address the issue of whether the Examiner so erred.

#### *Analysis*

Appellants argue that, *contra* the Examiner, Iliff teaches that the “computer supports access to statistics, databases, decision-making, scheduling,” but does not disclose that a document is provided to an automatic decision support system. App. Br. 35 (quoting Iliff, ¶ [0337]). According to Appellants, Iliff’s disclosure of “decision-making” does not disclose a method which is used to support decision making by physicians or others, i.e., decision support. App. Br. 35.

Appellants argue further that Heinze does not cure this deficiency, allegedly teaching only that a flagged note/file/document and codes are sent to a recipient to improve system reliability. App. Br. 36 (citing Heinze, col.

5. II. 5-38). Appellants contend that Heinze does not teach or suggest that the flagged note may be sent to an automatic decision support system, whether implemented in software or otherwise, but teaches only that the note is displayed to a human. App. Br. 36.

The Examiner responds that Iliff teaches or suggests an automated disease management system to diagnose and treat user symptoms which operates by receiving user speech and transcribing this speech to text for further processing by the system. Ans. 8-9 (citing Iliff, Abstract). The Examiner finds that voice recognition, which generates resultant text, is by definition a document. Ans. 9 (citing Iliff, Fig. 1 (elements 114, 124); ¶ [0080]). The Examiner finds that symptoms in the document are then encoded using a PQRST (pain code) array encoding scheme, and is then forwarded to a diagnostic or disease management system. Ans. 9 (citing Iliff, ¶¶ [0129]; [0231]-[0245]; [0337]; [0109]-[0112]; [0130]). The Examiner finds that, in the diagnostic system, the PQRST array is used for determining and looking up a corresponding disease for the encoded document, whereas in the disease management system, a health assessment task evaluates the coded document and determines the progress of treatment and what the next action the system should take, such as adjusting therapy or giving medical advice Ans. 9 (citing Iliff, Fig. 22b; ¶¶ [0253]; [0119]; [0130]-[0133]). The Examiner thus finds that both the diagnostic and disease management systems make a health decision to support the user based upon the encoded document and that, therefore, a document is provided to an “automatic decision support system.” App. Br. 9.

We agree with the Examiner’s position and adopt it as our own. Appellants’ Specification refers numerous times to a “document” as the

electronic output from a voice recognition device and we find that Iliff teaches or suggests a document that is produced via a voice recognition device and encoded via a PQRST array encoding scheme which corresponds to such a document. Ans. 9; Iliff, ¶ [0129] Spec., 4 (“[O]ne embodiment of the present invention is a computer-implemented method comprising: (A) applying an automatic speech recognizer to a spoken audio stream to produce a first document including first codings associated with text in the first document”). Moreover, we agree with the Examiner’s findings that the diagnostic and disease management systems taught by Iliff correspond to the limitation of claim 1 reciting an “automatic decision support system.” Ans. 9. We therefore conclude that the Examiner did not err in finding that the combination of Heinze and Iliff teaches or suggests the limitation of claim 1 reciting “providing the first document to an automatic decision support system.”

### *Issue 2*

Appellants argue that the Examiner erred in finding that the combination of Heinze and Iliff teaches or suggests the limitation of claim 1 reciting “transmitting to a recipient the verified document and the decision support output.” App. Br. 36-37. We therefore address the issue of whether the Examiner so erred.

### *Analysis*

Appellants argue that even if the “output record” taught by Heinze corresponds to the “verified document” recited in claim 1, Heinze does not

teach or suggest transmitting both the output record and decision support output (i.e., the output of the automatic decision support system) to a recipient. App. Br. 37 (citing Heinze, col. 5, ll. 33-39). According to Appellants, Heinze teaches or suggests sending to a recipient at most a note, but not the other recited claim element of the decision support output. App. Br. 37-38.

The Examiner responds that Iliff teaches or suggests that, during interaction with the system, the user is given feedback such as a diagnosis and medical advice (decision support output). Ans. 9 (citing Iliff, ¶¶ [0119], [0253]). The Examiner finds further that, after the user has chosen to end the session the user is presented with a summary of all the advice the system has given the user, and that his summary is transmitted to the patient or doctor through facsimile or e-mail. Ans. 9 (citing Iliff, ¶ [0118]).

We are persuaded by the Examiner's reasoning and adopt it as our own. Iliff teaches or suggests that:

[b]efore the system **100** ends the consultation with the patient, it presents a summary of all the advice it has given. In a telephonic session, the patient is asked to write down and repeat back the key points. The system **100** then gives the patient the option of receiving a summary of the consultation session and specific recommendations. The system **100** then gives the patient the option of receiving a summary of the consultation session and specific recommendations provided by the system via facsimile, electronic mail (E-mail) or a mail service, such as first-class mail.

Ans. 9; Iliff, ¶ [0118]. The writing and read back requirements for the recipient correspond to the limitations requirement of a verified message. *Id.* Moreover, the consultation with the present incorporates information from the diagnostic and disease management systems (i.e., the automated

decision support system) as discussed *supra*. We therefore conclude that the Examiner did not err in finding that the combination of Heinze and Iliff teaches or suggests the limitation of claim 1 reciting “transmitting to a recipient the verified document and the decision support output.”

## Claim 16

### *Issue*

Appellant argues that the Examiner erred in finding that the combination of Heinze and Iliff teaches the limitation of claim 16 reciting “determining whether the first document indicates at least one of a drug-drug, drug-allergy, and drug procedure interaction.” App. Br. 39-40. We therefore address the issue of whether the Examiner so erred.

### *Analysis*

Appellants argue that Iliff teaches using a Disease Management Module (DMM) to “gradually titrate the dose of a medication until the benefit/side effect ratio is maximized.” App. Br. 40. Appellants contend that Iliff thereby discloses applying medications to a patient, observing the effects of the medication on the patient, and modifying the dosage in response to those effects. *Id.* Appellants argue that Iliff does not disclose determining whether a document indicates an interaction, such as a drug-drug, drug-allergy, or drug-procedure interaction, as expressly recited by the disputed limitation. App. Br. 40-41.

Furthermore, Appellants maintain that the drug database taught by Heinze might, for example, merely encode names of drugs; such information would not indicate drug-drug, drug-allergy, or drug-procedure interactions.

Ans. 41. Appellants argue further that, regardless of the content of Heinze's drug database, Heinze does not teach that such a database may be used to perform the express action recited by claim 16, *viz.*, determining whether a document indicates at least one of a drug-drug, drug-allergy, and drug-procedure interaction. *Id.*

The Examiner responds that Heinze teaches or suggests a system for assigning medical codes to documents. Ans. 10 (citing Heinze, Abstract). The Examiner finds that the determination of whether a phrase should be assigned a code is performed by matching the parsed items of a document against different databases of knowledge-based vectors including drugs. Ans. 10-11 (citing Heinze, col. 4, ll. 43-55; col. 17, ll. 18-38). The Examiner finds that the vectors represent diagnoses and procedures in “is-a,” “synonymy” and “part/whole” relationships. Ans. 11 (citing Heinze, col. 4, ll. 43-50). Therefore, finds the Examiner, drug vectors represent relationships of drugs with other medical terms such as other drugs (hence a drug-drug interaction). Ans. 11.

We are persuaded by the Examiner's reasoning. Heinze teaches that:

The complexity of medical decision making is determined from: the actual and possible diagnoses considered by the physician along with the possible management options; the amount and complexity of medical records, diagnostic tests, and/or other information that must be obtained, reviewed, and analyzed; the risk of significant complications, morbidity, and/or mortality, as well as co-morbidities, associated with the patient's presenting problem(s), the diagnostic procedure(s) and/or the possible management options. Vector databases are defined to cover the second area of review and consultation.

Heinze, col. 17, ll. 19-29; Ans. 11. We find that “the amount and complexity of medical records, diagnostic tests, and/or other information

that must be reviewed, and analyzed” would teach or suggest, to an artisan of ordinary skill in the contemporaneous art, the determination of drug-drug, drug-allergy, and drug procedure interaction, as recited in the disputed limitation of claim 16. We therefore conclude that the Examiner did not err in finding that the combination of Iliff teaches or suggests the limitations of claim 16.

### Claim 17

#### *Issue*

Appellants argue that the Examiner erred in finding that the combination of Heinze and Iliff teaches or suggests the limitation of claim 17 reciting “determining whether the first document indicates satisfaction of a clinical performance measure.” App. Br. 42. We therefore address whether the Examiner so erred.

#### *Analysis*

Appellants argue that, rather than teaching or suggesting the disputed limitation, Iliff describes a situation in which a headache specialist has made a diagnosis after a full and complete examination, thereby indicating that the diagnosis is highly reliable or, if the reliability is too low, that the patient will be scheduled for re-evaluation. App. Br. 42-43 (citing Iliff, ¶ [0324]). Therefore, according to Appellants, Iliff discloses determining whether the reliability of a diagnosis is too low, but neither teaches nor suggests determining whether a document indicates whether a clinical performance measure has been satisfied. App. Br. 43.

Appellants also argue that the teaching or suggestion of Heinze that obtaining the correct results are important (Heinze, col. 22, l. 46-54) and that the procedure must be justified or verified (Heinze, cols. 23-24, ll. 61-34) does not teach or suggest determining whether a document indicates whether a clinical performance measure has been satisfied. App. Br. 43.

The Examiner responds that Iliff teaches that, in the diagnostic system, the PQRST array is used for determining and looking up a corresponding disease for the encoded document. Ans. 11 (citing Iliff, Fig. 22b; ¶ [0253]). The Examiner finds that the disease database indexes diseases based upon different aspects of pain that the user may experience. Ans. 11 (citing Iliff, Fig. 22b, element 262). Therefore, finds the Examiner, the diagnosis module determines if the document satisfies one of the diseases in the database accessed by pain. The Examiner finds that the storing of a disease with common indicators of that disease (types of pain) is a “clinical performance measure.”

We agree with the Examiner. Iliff teaches, by way of example, that once a coded document is generated:

a suitably formatted Structured Query Language (SQL) statement; another example is a simple array of disease names or pointer that is accessed using the index position of each element. Process **1170** receives control at start node **1172**. Then process **1170** passes control to step **1174**, which loads a copy of the PQRST Array to be used to select the diagnosis from database **262** .... Next, process **1170** passes control to terminal node **1180**, which returns control to the calling process.

Iliff, ¶ [0253], *see also* Fig. 22b; Ans. 11. We find that the Iliff’s teaching and suggestion of making and recording of a diagnosis would, to a person of

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ordinary skill in the art, correspond to the language of claim 17 reciting “satisfaction of a clinical performance measure.” We consequently conclude that the Examiner did not err in finding that the combination of Heinze and Iliff teaches or suggests the limitation of claim 17.

#### DECISION

The Examiner’s rejection of claims 1-5, 9-19, 23-29, and 34-47 as unpatentable under 35 U.S.C. §103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

ELD