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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ANNALISA MOREA and FLORENCE LEPLINGARD

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Appeal 2016-005275  
Application 13/390,742<sup>1</sup>  
Technology Center 2600

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Before JUSTIN BUSCH, JENNIFER L. McKEOWN, and CARL L. SILVERMAN, *Administrative Patent Judges*.

McKEOWN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–15. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

Appellants' invention is directed to "the field of optical communication networks, in particular the field of optical networks, which are capable of establishing transparent optical connections to transport data flows." Abstract.

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<sup>1</sup> The real party in interest is identified as Alcatel-Lucent.

Claim 1 is illustrative and is reproduced below:

1. Method for dynamically producing a representation of physical degradations in a network control unit of a wavelength switched optical network (WSON), said WSON comprising transparent switching nodes mutually connected by optical links, said method executed by the node control unit and comprising the steps of:

associating a pair of counter-directional optical links between neighboring nodes as a bi-directional link,

providing at least one respective physical degradation parameter for each of said counter-directional optical links of said pair,

determining at least one physical degradation parameter characteristic of said bi-directional link from said physical degradation parameters of the counter-directional optical links of said pair,

storing a descriptor of the bi-directional link comprising said at least one physical degradation parameter characteristic of said bi-directional link in said node control unit; and

determining said transmission quality of the [bi-directional] link according to said bi-directional link descriptors.

#### THE REJECTIONS

Claims 1–6 are rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Final Act. 3–4.

Claims 1, 6–10 and 15 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sadananda (US 8,244,127 B2; iss. Aug. 14, 2012) and Eiselt (US 2004/0175187 A1; pub. Sept. 9, 2004). Final Act. 5–7.

Claims 2 and 11 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sadananda, Eiselt, and Tanaka (US 2003/0174389 A1; pub. Sept. 18, 2003). Final Act. 7–8.

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Claims 5 and 14 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sadananda, Eiselt, and Boroditsky (US 2011/0129215 A1; pub. June 2, 2011). Final Act. 8–9.

Claims 3 and 12 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sadananda, Eiselt, and McNamara (US 6,545,799 B1; iss. April 8, 2003). Final Act. 9.

Claims 4 and 13 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sadananda, Eiselt, Imajuku (US 2003/0147645 A1; pub. Aug. 7, 2003) and Penninckx (US 2005/0175340 A1; pub. Aug. 11, 2005). Final Act. 10–11.

## ANALYSIS

### THE 35 U.S.C. § 101 REJECTION

#### *Claims 1–6*

Based on the record before us, we are not persuaded that the Examiner erred in rejecting claims 1–6 under 35 U.S.C. § 101 as directed to patent-ineligible subject matter.

The Examiner determines that “Claims 1–6 are directed to the abstract idea of ‘collective descriptor of multiple values’.” Final Act. 4. The Examiner further explains

The claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the control unit as recited is a generic computer component that performs functions (i.e., calculating the average; determining the maximum or the minimum of two numbers; calculating the square root of a number; storing descriptor number in database; and determine another number from the descriptor number). These are generic computer functions that

are well-understood, routine, and conventional activities previously known to the industry.

Final Act. 4.

Appellants, on the other hand, assert that claims 1–6 are not directed to an abstract idea and, even if claim 1 was directed to an abstract idea, the claim includes significantly more than the judicial exception. App. Br. 7–8. More specifically, Appellants contend the Examiner’s determination that the claim is directed to a “collective descriptor of multiple values” is a gross distortion and does not comport with the 2014 Interim Guidance. App. Br.

7. Appellants explain

that claim 1, reciting a method of operating a node control unit in a wavelength switched optical network (WSON), is clearly does [sic] not include an abstract idea. It is not a fundamental economic practice, nor would interacting directly with an optical link be understood as a typical human activity. The claim steps also do not recite the general mathematical operations as alleged by the Examiner. Instead, the claim recites specific actions performed by hardware elements that do not constitute a principle, original cause or motive. No mathematical relationships or formulas are recited.

App. Br. 8.

Additionally, Appellants argue that the claims include significantly more than the judicial exception. Namely,

one of ordinary skill in the art would readily recognize that a wavelength switched optical network (WSON) is computer-implemented system and that any practical implementation of the method steps is within hardware and software elements of the computer system. A node control unit is recited in both the preamble and the storing step of claim 1. The preamble also recites switching nodes connected by optical links, which are both well-understood to be computer-implemented devices. All

of the steps refer to optical links and particularly, to physical parameters of the optical links.

The claimed method is not merely performing an idea via a computer, but improves the functioning of an optical network. Taking the additional claim elements individually, and in combination, the claim as a whole amounts to significantly more than the alleged abstract idea.

App. Br. 8.

Following the decision in *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014) (citing *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (2012)), we analyze claims under the two-part analysis set forth in *Mayo*. First, we consider whether the claim is directed to an abstract idea and, second, if an abstract idea is present in the claim, we determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim amounts to significantly more than the abstract idea itself. *See Alice*, 134 S. Ct. at 2350.

We recognize that the steps of claim 1 are performed by a node control unit, nevertheless, claim 1 is directed to a method for producing a representation of physical degradation in a network. The steps include associating links, collecting parameters and characterizations for the links, storing the characterizations, and analyzing the characterizations to determine transmission quality. As such, we agree with the Examiner that character of the claim as a whole is merely data collection (collecting the bi-directional link values) and data analysis (determining the transmission quality). This is consistent with the Specification that explains in the embodiment of Figure 2 that the node control unit comprises a database that receives information (which may be entered manually) that is stored and

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dynamically updated. Spec. 6, ll. 19–21. *See also* Spec. 6, ll. 27–32 (identifying the various types of data that may be used).

As such, we agree with the Examiner that claim 1 is directed to an abstract idea. *See TDE Petroleum Data Solutions, Inc., v. AKM Enter., Inc.*, 657 F. App’x 991 (Fed. Cir. 2016) (unpublished) (citing *Elec. Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (“claims generally reciting ‘collecting information, analyzing it, and displaying certain results of the collection and analysis’ are ‘a familiar class of claims ‘directed to’ a patent-ineligible concept.’”)); *see also Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014).

Appellants’ assertions that the claims include significantly more than the abstract idea also lack merit. While the claims do include network components, these are well-known, conventional components. As the Examiner points out,

[t]he claim also recites a node, a first party device, and a wavelength switched optical network (WSO), which do not add meaningful limitations to the idea of “collective descriptor of multiple values” beyond generally linking the system to a particular technological environment, that is, implementation in a network controller.

Final Act. 4; *see also* Spec. 1. Therefore, we find Appellants’ argument unpersuasive.

Accordingly, we determine that the Examiner did not err in rejecting claim 1, as well as claims 2–6 not argued with particularity, under 35 U.S.C. § 101.

THE OBVIOUSNESS REJECTION BASED ON SADANANDA AND EISELT

*Claims 1, 6–10, and 15*

Based on the record before us, we are not persuaded that the Examiner erred in rejecting claims 1, 6–10, and 15.

Appellants argue that Sadananda fails to teach or suggest associating a pair of counter-directional optical links between neighboring nodes as a bi-directional link. App. Br. 9. Specifically, Appellants allege that while Sadananda teaches bi-directional signal flow on a link, this is insufficient to teach that the pair of links are “associated, i.e. given a specific identity as, ‘a bi-directional link’ as claimed.” *Id.*

We find this argument unpersuasive. Namely, as the Examiner explains, having an optical flow in both directions at least suggests a bi-directional link. Ans. 3. Moreover, Sadananda expressly describes *bi-directional label switched paths* and explains that “the optical network can be thought of as consisting of the logical pairing of lightpaths to construct bi-directional associations between the access nodes....” Sadananda, col. 1, ll. 34–35; col. 2, ll. 59–65.

Likewise unavailing is Appellants’ assertion that Sadananda does not teach or suggest “providing at least one respective physical degradation parameter for each of said counter-directional optical links of said pair.” App. Br. 9. The underlying premise of Appellants’ argument here is again the lack of an associated pair of links. Specifically, Appellants allege that Sadananda only describes keeping separate attributes for each direction, not “for each of said counter-directional optical links **of said pair**” (emphasis added). The counter-directional optical links of the claims are combined to provide for **pairs** of counter-directional optical links.” App. Br. 9–10. As



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the Examiner points out though, nothing in the claim precludes keeping separate attributes for each optical link of the pair. Ans. 3. Namely, claim 1 merely requires providing *at least* one respective physical degradation parameter for each of said counter-directional optical links of said pair. Thus, we find Appellants' argument unpersuasive.

Appellants also argue that Sadananda lacks the limitation of “storing a descriptor of the bi-directional link comprising said at least one physical degradation parameter characteristic of said bi-directional link in said node control unit.” App. Br. 10. While Appellants acknowledge that Sadananda teaches storing attributes, Appellants maintain this “in no way implies that the attribute relates to the bi-directional link comprising said at least one physical degradation parameter characteristic of said bi-directional link.” *Id.*

This argument is unpersuasive because it fails to consider the teachings of Eiselt. *See* Final Act. 4. Specifically, the Examiner relies on Eiselt as teaching “determining at least one physical degradation parameter characteristic of said bi- directional link from said physical degradation parameters of the counter-directional optical links of said pair.” Ans. 4.

Appellants then contend that Sadananda fails to teach or suggest “determining said transmission quality of the [bi-directional] link according to said bi-directional link descriptors.” More specifically, Appellants state that Sadananda only provides “a very generic statement of path-based routing. It falls far short of teaching or suggesting the specific claim language.” App. Br. 10.

We disagree. Sadananda describes that the quality check module will determine if certain requirements are met by the set of path-based optical attributes, i.e. transmission quality. Sadananda, col. 6, l. 67 – col. 7, l. 5; *see also* Ans. 4. Appellants' conclusory assertions are therefore insufficient to

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persuade us of error in the Examiner's finding that Sadananda teaches this limitation.

Turning to Eiselt, Appellants assert that Eiselt does not disclose “determining at least one physical degradation parameter characteristic of said bi-directional link from said physical degradation parameters of the counter-directional optical links of said pair.” App. Br. 11. According to Appellants, Eiselt only discloses “compensating ‘for the chromatic dispersion (i.e., physical degradation parameter characteristic) of [bi-directional] links 111 and 110, that is the single dispersion compensation value corresponds to a single dispersion value representing the two counter-directional links 111 and 110.’” App. Br. 11 (Office Act. 5). Appellants further distinguish Eiselt because Eiselt describes determining dispersion compensation parameters as the fiber optic system is installed, not dynamically generating a physical degradation parameter characteristics “of said bi-directional link.” App. Br. 11–12.

We find these arguments unavailing. Instead, we agree with the Examiner that

a single dispersion compensation value to compensate for the dispersion of optical signals in both directions necessarily means that the compensation value of the DCM represents the dispersion amount that needs to be compensated in both directions (i.e., physical degradation parameter characteristic of said bi-directional link). Further, Eiselt et al. teaches in

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paragraphs [0058] an [0059] a single descriptor that represents the dispersion in both directions.

Ans. 5; *see also* Eiselt ¶ 49 (noting that the dispersion management will take into account the propagation quality for *both* directions).

Accordingly, we sustain the rejection of claim 1, as well as claims 6–10, and 15 not argued separately with particularity, as unpatentable over Sadananda and Eiselt.

#### THE REMAINING OBVIOUSNESS REJECTIONS

##### *Claims 2–5 and 11–14*

Appellants do not present separate arguments for the patentability of claims 2–5 and 11–14. Instead, Appellants allege that the secondary references do not cure the deficiencies of Sadananda and Eiselt. As discussed above, we are unpersuaded that the Examiner erred in rejecting claims 1 and 10 as unpatentable over Sadananda and Eiselt. As such, we also sustain the obviousness rejections of claims 2–5 and 11–14.

#### DECISION

The Examiner’s decision rejecting claims 1–15 is affirmed.

AFFIRMED