UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

NEXTGEN INNOVATIONS, LLC v. FUJITSU NETWORK COMMUNICATIONS, INC., et al.	§ § § § § §	CASE NO. 2:22-cv-00307-JRG-RSP (Lead Case)
NEXTGEN INNOVATIONS, LLC v. INFINERA CORPORATION	§ § § § §	CASE NO. 2:22-cv-00306-JRG-RSP (Member Case)
NEXTGEN INNOVATIONS, LLC v. AT&T SERVICES, INC., et al.	§ § § § §	CASE NO. 2:22-cv-00308-JRG-RSP (Member Case)
NEXTGEN INNOVATIONS, LLC v. NOKIA OF AMERICA CORPORATION, et al.	§ § § § § §	CASE NO. 2:22-cv-00309-JRG-RSP (Member Case)

OPENING EXPERT REPORT OF DR. PAUL PRUCNAL REGARDING
INVALIDITY OF U.S. PATENT NOS. 9,887,795; 10,263,723; AND 10,771,181

Nokia of America Corporation
IPR2023-00682, Ex. 1058
Ex.1058.1

well after the Sotos invented the technology claimed in the m-ary patents . . . such technology was only disclosed in line cards, not pluggable optical transceivers," thus making the alleged invention "revolutionary." But, as shown in Section XIV below, the inventors were not in possession of the alleged invention as of 2003, and the M-ary Patents lack enablement and written description. Therefore, there was no "long-felt need" that was addressed by the Asserted Claims. Moreover, NextGen failed to show any nexus between any alleged "long-felt need" and any claimed features.

1465. ***Copying.*** In its response to Common Interrogatory No. 11, NextGen generally alleges that Nokia has "known about the patents-in-suit, or their parent families, since the mid-2000s." But, NextGen fails to offer specific evidence of copying, let along any evidence supporting a nexus between any alleged copying and any claimed features.

* * *

1466. It is my opinion that there are no objective indicia of non-obviousness evidencing the validity of any of the Asserted Claims. Further, to the extent any products allegedly practicing the claims have been successful, there is no nexus between the claimed inventions and the products' alleged success.

1467. In its response to Common Interrogatory No. 11, NextGen did not allege or offer any specific evidence showing unsuccessful attempts, superior results, skepticism by others, praise, award, industry recognition, or any other secondary considerations. In fact, Frank Effenberger, a rapporteur at the ITU-T with decades of experience in the optical industry, testified that he has never "heard anyone ever attribute any technology to the Soto brothers."[2389]

1468. To the extent NextGen or its expert sets forth any evidence of any objective indicia of non-obviousness, I reserve the right to respond.

XIV. INVALIDITY OF THE M-ARY PATENTS BASED ON § 112

1469. Under NextGen's apparent theory of infringement, the Asserted Claims are invalid under 35 U.S.C. § 112 for failure to meet the written description and enablement requirements.

1470. As discussed throughout my Report, each Asserted Claim in the M-ary Patents

[2389] Ex. 43 (F. Effenberger Depo. Tr.) at 77:24-78:5.

Nokia of America Corporation
IPR2023-00682, Ex. 1058
Ex.1058.2

includes the requirement that the claimed "optical transceiver module" be a "***pluggable*** optical transceiver module."[2390] But, the "pluggable" limitation is not disclosed in the specification. In fact, the word "pluggable" first appeared in the prosecution history when the Applicants amended the claims that led to the issue of the '795 Patent to overcome the prior art.[2391] The addition of the "pluggable" limitation was, therefore, an alleged point of novelty of the M-ary Patents in light of the prior art. This means a POSITA would not inherently know how to make the claimed m-ary transceiver pluggable.

1471. Moreover, to the extent NextGen relies on the disclosure that "[t]hese optical modules [] used herein can conform to a form factor of standard optical modules such as the 300pin, XENPAK, X2, XPAK, XFP or SFP and SFP+"[2392] this does not provide sufficient support to enable to claims. Nor do any of the high-level block-diagram figures in the M-ary Patents.

1472. This is because there is nothing in the specification, claims, or drawings to teach a POSITA how to make or package the opto-electrical components capable of performing the claimed functionalities within a small, pluggable optical transceiver module. Tellingly, as of the 2003 priority date, it would have been extremely difficult and expensive to make and package the necessary components to perform the claimed m-ary modulation and signal processing within a pluggable transceiver. In addition, it would have been difficult to dissipate the necessary heat to allow such a pluggable transceiver to function.

1473. This is apparent after reviewing the deposition transcripts of the two inventors, Alexander Soto and Walter Soto. For example, Alexander Soto testified:[2393]

[2390] Ex. 2 ('795 Patent) at cl. 1; Ex. 3 ('723 Patent) at cl. 1; Ex. 4 ('181 Patent) at cl. 1 (emphasis added).

[2391] *Supra* at Section VIII.C.

[2392] *See, e.g.*, Ex. 2 ('795 Patent) at 11:25-28.

[2393] Ex. 30 (A. Soto Depo. Tr.) at 285:6-14, 288:2-16 (emphasis added).

Nokia of America Corporation
IPR2023-00682, Ex. 1058
Ex.1058.3

…

1474. And Walter Soto similarly testified[2394]:

…

[2394] Ex. 31 (W. Soto Depo. Tr.) at 93:2-94:1, 94:23-95:10, 97:3-98:2, 99:1-7 (emphasis added and objections omitted).

Nokia of America Corporation
IPR2023-00682, Ex. 1058
Ex.1058.4

…

…

1475. I understand that the inventors were never able to reduce their alleged invention to practice, even via an elementary prototype. In fact, despite years of trying to profit off their alleged invention and reduce it to practice (which occurred after the priority date), the inventors themselves were never able to create a single working prototype.

1476. Despite being state of the art and requiring custom parts, the M-ary Patents are silent on what parts should be used and how the parts should be packaged within a pluggable transceiver. A POSITA, therefore, when reading the M-ary Patents would not know how to implement the m-ary modulation capability within the small confines of a pluggable transceiver.

Nokia of America Corporation
IPR2023-00682, Ex. 1058
Ex.1058.5

1477. Therefore, because the patents are noticeably devoid of any description sufficient to teach a POSITA how to make the claimed opto-electrical components small enough to fit within the pluggable, let alone how to package the components within the pluggable in a manner that would allow the pluggable transceiver to function properly in light of power and overheating concerns, a POSITA would not have been able to utilize the alleged invention.

1478. Moreover, to the extent NextGen contends the M-ary Patents disclose coherent optical modules in a pluggable form factor, the M-ary Patents do not describe this or claim such a pluggable so as to enable the invention, nor do the M-ary Patents provide sufficient written description to a POSITA to make and use the invention. For example, Frank Effenberger, a former colleague of the inventors who worked in the inventors' startup company and now rapporteur of the ITU Study Group 15, testified that coherent optical modules in a pluggable form factor are not described in the M-ary Patents and that the inventors did not invent such a concept.[2395]

> **Q: Okay. In connection with your preparation for this deposition, in rereading the Soto brothers' patents, did you come across anything that made you think, Oh, there's a solution for how you could implement coherent optics in a commercially viable way; in other words, a solution for some of these problems that the industry was facing?**
>
> A: ***No***, I do not believe so***. I didn't notice any discussion of coherent techniques in any of those patents***.
> …
>
> **Q: And as far as you know, is it fair to say that the Soto brothers had absolutely nothing to do with the research and the techniques that made it possible to put a coherent optical module into a pluggable form factor?**
>
> A: ***Yes***, that's my understanding. They never talked to me about -- actually I should say he, because I only talked to Walt. But ***he never mentioned anything about optical coherent anything, module or otherwise***.

XV. DEMONSTRATIVES

1479. I have not yet prepared any exhibits or demonstrative evidence for the trial, but I intend to do so pursuant to the schedule set by the Court. I reserve the right to use animations, demonstratives, enlargements of real exhibits, and other devices to illustrate my opinions.

[2395] Ex. 43 (F. Effenberger Depo. Tr.) at 97:13-23, 98:19-99:3 (emphasis added).

Nokia of America Corporation
IPR2023-00682, Ex. 1058
Ex.1058.6

XVI. SUPPLEMENTATION

1480. I reserve the right to amend or supplement this Report based on further discovery and preparation in this Litigation, including my review of any expert report submitted on behalf of Plaintiff or any additional claim construction rulings. I specifically reserve the right to modify my Report in response to any evidence provided by or expert report submitted on behalf of Plaintiff. I also reserve the right to rely on all other expert reports submitted in this Litigation. For the trial, I may prepare or help to create certain diagrams, charts, and demonstrations that illustrate the issues.

Nokia of America Corporation
IPR2023-00682, Ex. 1058
Ex.1058.7

[redacted]

XVII. CONCLUSION

For all of the reasons discussed in this Report, it is my opinion that the Asserted Claims of the M-ary Patents are invalid.

I declare under penalty of perjury that the foregoing opinions are true and correct.

Executed this 15th day of December, 2023.

By: _____

Dr. Paul Prucnal

Nokia of America Corporation
IPR2023-00682, Ex. 1058
Ex.1058.8