

TABLE OF CONTENTS

	Page(s)
I. INTRODUCTION AND SUMMARY OF ARGUMENT.....	1
II. THE COURT SHOULD ORDER LIMITED REARGUMENT TO PROPERLY DEFINE “DOUBLE BOOTSTRAPPING CIRCUIT.”.....	2
A. The Court Overlooked Extrinsic Evidence Defining “Double Bootstrapping.”	2
B. The Inventor’s Decision Not To Fully Describe the “Well Known Double Bootstrapping Circuit” Requires the Use of Extrinsic Evidence to Properly Define the Term	3
1. The Extrinsic Evidence Supports MOSAID’s Definition of “Double Bootstrapping.”	6
2. The Intrinsic Record Does Not Support Limiting “Double Bootstrapping Circuit” to a Single Self-Bootstrapped NMOS Pass Transistor.....	9
III. CONCLUSION	13

I. INTRODUCTION AND SUMMARY OF ARGUMENT

MOSAID appreciates that the Court invested substantial time and effort in claim construction in this case. Nonetheless, MOSAID respectfully moves that the Court grant limited reargument (or clarify) its March 22 Order as to the definition of “double bootstrapping circuit” in light of evidence overlooked by the Court establishing how skilled artisans used the term.¹

The Court rejected the definitions proposed by the parties and instead defined “double bootstrapping circuit” as “a self-bootstrapping N-MOS transistor as the pass transistor.” (Opinion, pp. 25, 28.) The Court’s definition limits a “double bootstrap *circuit*” to a single component, a self-bootstrapping NMOS pass transistor. This leaves out the boost capacitor (generating an unregulated voltage) at the heart of *every* discussion of double bootstrapping, in the intrinsic record, in the prior art, and even in Samsung’s arguments to the Court.

The Court’s task in defining “double bootstrap circuit” was complicated by the fact that it is not a claim term. In fact, the inventor made it clear she was not fully describing that circuit by describing it as “well known”. Where, as here, there were no dictionary definitions offered and the inventor directed skilled readers outside her patent, the Court was required to consult all the extrinsic

¹ MOSAID is *not* here challenging the Court’s conclusion that its patents disclaimed coverage of “double bootstrapping circuits,” nor is it seeking reargument on any other issue, though it does reserve its rights to appellate review.

evidence (discussed below and attached to the Walsh Certification) to confirm that its definition of “double bootstrap circuit” was consistent with how skilled artisans understood that term. It is not. MOSAID thus respectfully submits that the Court should grant reargument to consider all the objective, extrinsic evidence, and that the resulting, proper definition of “double bootstrapping circuit” is “a boosting capacitor that provides an unregulated voltage to the drain of a self-bootstrapping NMOS transistor.”

II. THE COURT SHOULD ORDER LIMITED REARGUMENT TO PROPERLY DEFINE “DOUBLE BOOTSTRAPPING CIRCUIT.”

A. The Court Overlooked Extrinsic Evidence Defining “Double Bootstrapping.”

The Court’s discussion of “double bootstrapping” did not address any of the extrinsic evidence before it,² with one exception discussed below. *Id.* Thus, the extrinsic evidence was “overlooked” within the meaning of Local Rule 7.1(g).³

² See, e.g., Walsh Cert., Ex. B-06 (Chart of “Prior Art Double Bootstrapped Circuit”); Walsh Cert., Ex. A (Oral Argument Transcript, pp. 16:14-18, 19:3-8, 115:13-117:5, 126:1-16; 204:11-205:9; 206:12-207:1, 405:15-406:20); Walsh Cert., pars. 4-8; Walsh Cert. Exs. C (Street Patent), D (Slemmer Patent), E (IBM/Lu Paper) and F (Toshiba Report).)

³ The standard on a motion for reargument is well known: “Only where matters were overlooked and which, if considered by the Court, might reasonably have resulted in a different conclusion, will the Court entertain such a motion.” *Rouse v. Plantier*, 997 F. Supp. 575, 578-579 (D.N.J. 1998) (denying reargument), vacated on other grounds, 182 F.3d 192 (3d Cir. 1999). Judge Orlofsky’s decision in *Greene v. Roche*, Slip Op., D.N.J. April 16, 2002, CV-00-4630 (Walsh Cert., Ex. H), is worth noting on the meaning of “overlooked” in a case of factual complexity. In *Greene*, the Court had originally denied summary judgment in an employment action. On reargument, the Court examined aspects of defendant’s

B. The Inventor’s Decision Not To Fully Describe the “Well Known Double Bootstrapping Circuit” Requires the Use of Extrinsic Evidence to Properly Define the Term.

As Samsung argued, while extrinsic evidence may not be used to contradict a patent,

even if the intrinsic record is clear, the extrinsic evidence may be used to educate the [C]ourt about the invention, the relevant technology, and terms of art that appear in a patent. [citations omitted] Additionally, such evidence should be used by the [C]ourt “to ensure that the claim construction it is tending to from the file history is not inconsistent with clearly expressed, and widely held understandings in the technical field.” [citations omitted]

(Defendant’s Claim Construction Brief, filed July 11, 2003, ¶¶ 22-23 (emphasis supplied).) In fact, the Federal Circuit has repeatedly reminded parties that it is often *required* to consider extrinsic evidence in construing patent claims. For example, in *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116 (Fed. Cir. 2002), the Court reversed a summary judgment of invalidity based on the alleged indefiniteness of a claim term, and remanded with specific directions to take “appropriate recourse to extrinsic evidence concerning the usage and understanding of the term [] in relevant context.” *Id.* at 1120. The Court explained

(continued...)

personnel policies which had been before the Court but apparently were not addressed in the earlier ruling. *Id.* at 6-8. After noting those policies were “somewhat opaque,” the Court reconsidered its previous denial of summary judgment, and granted the motion. *Id.* at 6, 9.

the importance of considering extrinsic evidence in view of the fact that patents are written to speak to persons of skill in the relevant art:

While reference to intrinsic evidence is primary in interpreting claims, the criterion is the meaning of words as they would be understood by persons in the field of the invention. Patent documents are written for persons familiar with the relevant field; *the patentee is not required to include in the specification information readily understood by practitioners*, lest every patent be required to be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field. *Thus resolution of any ambiguity arising from the claims and specification may be aided by extrinsic evidence of usage and meaning of a term in the context of the invention.*

Verve, LLC, id. at 1119-1120 (emphasis supplied). *See also NeoMagic Corp. v. Trident Microsystems*, 287 F.3d 1062, 1074 (Fed. Cir. 2002).

And, in *Bancorp Services, LLC v. Hartford Life Insurance Company*, 03-1181, Slip. Op., Fed. Cir. March 1, 2004, the Federal Circuit held specifically that it was “*error* for the court to decline to consider” extrinsic evidence in the form of an expert’s proposed definition of a claim term. *Id.* at p. 12 (emphasis supplied.) Similarly, it was “*error*” not to consider evidence of how the parties themselves used a term. *Id.* at 12-13.

MOSAID offered just the evidence repeatedly approved by the Federal Circuit (objective third party definitions, expert testimony and discussions by a party of a key term). All that evidence should have been considered.

To start with, the inventor made it very clear that a “double bootstrapping circuit” was not something she had invented, nor was it something she fully described in her patent, by referring to it as “well-known”. (‘602 Patent, col. 1, 11. 2-53) As in *Verve LLC*, when the inventor refers to generally known concepts, it is particularly necessary to consider extrinsic evidence of how skilled artisans used that term.

An example from the Court’s Opinion illustrates just this point. “Self bootstrapping transistor” was not defined in the patents and prosecution history. The Court thus relied on extrinsic evidence, the declaration of Richard Greene, to define that term. (Opinion, p. 27, citing Greene Report, ¶ 16.) The Court’s reliance on extrinsic evidence to define “self-bootstrapping transistor,” because that term was not defined in the patent, demonstrates how it was required for the Court to look to the extrinsic evidence on the very term in dispute, the “double bootstrapping circuit.” Yet the Opinion did not address Mr. Greene’s definition of “double bootstrapping circuit,” in the very next paragraph of his report (¶ 17).⁴

Having decided to define it, the Court’s obligation was to define “double bootstrapping circuit” as that term was used by skilled artisans. Because the inventor expressly directed the Court and skilled readers to the extrinsic evidence,

⁴ That definition is discussed further below. As shown, Mr. Greene’s definition is consistent with all other extrinsic evidence, and the intrinsic evidence as well.

and because Samsung's inconsistent arguments only created confusion, it is clear that the only way to properly define "double bootstrapping circuit" was through "appropriate resort" to all the available extrinsic evidence. *See Verve, LLC, id.*

1. The Extrinsic Evidence Supports MOSAID's Definition of "Double Bootstrapping."

Once it is all considered, the extrinsic evidence compels the conclusion that a "double bootstrap circuit" was understood by those skilled in the art to include a boost capacitor providing an unregulated voltage, in addition to the self bootstrapped transistor of the Court's definition.⁵ A few illustrative references, already before the Court, make this clear.

The IBM/Lu Paper (Walsh Cert., Ex. E) refers to a "conventional double-bootstrapping word line driver circuit" and a "conventional double-bootstrapping word-line technique." As illustrated in Figures 6 and 8 (*see* Walsh Exs. E; B-08), this "conventional" circuit includes both boost capacitor (Fig. 8) and a self-bootstrapped transistor.

⁵ Samsung cannot seriously disagree that a boost capacitor is a necessary component of a double bootstrapping circuit. It argued at the hearing that a double bootstrap circuit included both a boost capacitor and a self-bootstrapped transistor, and stated that the only issue was whether the voltage was controlled or not. (*See* Walsh Cert., Ex. A (Oral Argument Transcript, pp. 208-209, 401).) It did so as part of its effort to persuade the Court that the Foss Vpp pump was a double bootstrap (in other words, that the Foss patents disclaimed themselves). (*See* Opinion, pp. 50-52.)

In the Street Patent (Walsh Cert., Ex. C), the inventors discuss “bootstrap circuits” and “double bootstrapping.” *See, e.g.*, col. 5, ll. 3-49. As described in the text and illustrated in Figure 3a, the “double bootstrap” always includes at least one boost capacitor; one of the many “double bootstraps” described in the Street Patent is formed by self-bootstrapped transistor Q24 and boost capacitor C3.

The Slemmer Patent (Walsh Cert., Ex. D) is to the same effect. As described in MOSAID’s Reply Claim Construction Brief (filed July 18, 2003), pp. 4-5, one of Samsung’s own experts, William Slemmer, discloses a “double bootstrap inverter” which includes a self-bootstrapped transistor 73 and boost capacitor 77. Boot capacitor 77 supplies an uncontrolled voltage to self-bootstrapped capacitor 73. *See* col. 6, ll. 7-68, Fig. 3. Again, critically, a “double bootstrap” includes boost capacitors.

MOSAID’s own Toshiba Report (Walsh Cert., Ex. F) was discussed extensively in briefing in the prosecution history and at the hearing. As illustrated in argument slides B-08 and B-10 (Walsh Cert., Exs. B-08, B-10), the Toshiba Report discusses “double bootstrap levels” produced by a circuit including a boost capacitor and a self-bootstrapped transistor.⁶

⁶ As discussed at the hearing, the boost capacitor in the Toshiba double bootstrapping circuit does not produce a “regulated voltage” because it is generated from 0 volts every active memory cycle. The “keep up” pump “tops up” the unregulated level, but only during the active memory cycle.

Finally, Mr. Greene provided a definition of “double bootstrapping”

consistent with the other extrinsic evidence:

Double bootstrapping combines a boosting capacitor with a self-bootstrapped transistor. In such a circuit commonly used in DRAMs prior to the Lines patents, a boosting capacitor which produces an unregulated voltage drives the drain of a self-bootstrapping transistor.

(Greene (original) Report, p. 16.)

After considering all the extrinsic evidence, it is not possible to define a “double bootstrap circuit” as a single self-bootstrapped NMOS pass transistor. “*Double bootstrapping*” is the result of *combining* boost capacitors with self-bootstrapped transistors. The “well known,” “conventional” “double bootstrapping circuit” is a “boost capacitor producing an unregulated voltage applied to the drain of a self-bootstrapped NMOS transistor.” Any definition limited to one element, or the other, would be contrary to the understanding of those skilled in the art.⁷

⁷ The Court expressed some concern that MOSAID’s proposed disclaimer was meaningless because no companies currently use a double bootstrap word line driver. (Opinion, p. 25, fn. 16.) The extensive extrinsic evidence should allay that concern, as it shows just how widely double bootstrapping was known and practiced when it was supposedly disclaimed. The fact that DRAM manufacturers began to widely practice the Foss and Lines inventions after their public disclosure in the patents (some with licenses, some without), does not change the fact that in the early-mid 1990s, a disclaimer of double bootstrapping would have excluded many word line driver circuits. (Certification of Walsh, Ex. A (Oral Argument transcript, p. 406:2-8.))

2. The Intrinsic Record Does Not Support Limiting “Double Bootstrapping Circuit” to a Single Self-Bootstrapped NMOS Pass Transistor.

The term “double-bootstrap circuit” is not a claim term. The inventor had no reason to define it, and instead referred to it as “well-known.” Because the Court found that double-bootstrap circuits were disclaimed, the Court attempted to define the term. In doing so, however, the Court declined to consider all the extrinsic evidence (Opinion, p. 25), apparently relying on the *Vitronics* case:

If the ordinary meaning can be ascertained from the intrinsic evidence and contemporaneous dictionaries and treatises, the Court need not look to the extrinsic evidence as part of its obligation to construe the disputed claim terms. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

(Opinion, p. 14.)

Refusing the benefit of the extrinsic evidence regarding the “well-known” and “conventional” “double bootstrap circuit,” the Court was left to define a complex technical concept by parsing through years of inventor/examiner dialogue on many related issues. Unfortunately, the Court’s resulting definition of “double bootstrap circuit” is contradicted by the intrinsic record because it leaves out the critical boost capacitor producing an unregulated voltage.

Any disclaimer of coverage that would otherwise result from the plain meaning of claim language must be “clear,” “unambiguous” and “unmistakable,” *Omega Engineering, Inc. v. Raytek Corporation*, 334 F.3d 1314, 1324-25 (Fed.

Cir. 2003); *see also Amgen Inc. v. Hoechst Marion Roussel Inc.*, 314 F.3d 1313, 1327 (Fed. Cir. 2003). Thus it is worth re-examining all the key intrinsic evidence (*see* Appendix A (Walsh Cert., Ex. H)) to determine whether the inventor disclaimed a double bootstrapping circuit defined as only “a self-bootstrapping NMOS transistor as the pass transistor.” She did not.

In fact, the inventor’s discussion of the prior art focused on a “well known” and problematic circuit, namely, the “well-known double-boot strap circuit” that “*utilized capacitors.*” For example, the description cited by the Court of bootstrapping (Opinion, pp. 24-27, citing ‘602 patent, col. 1, ll. 35-53) is of an NMOS transistor whose gate is driven to a high voltage in a circuit that “*utilized capacitors in a well-known double bootstrap circuit.*”

The Court also cited a passage from a UK patent application submitted by the inventor in claiming priority for her US applications. In the UK application the inventor made a similar disclosure to that made in the Lines ‘602 application. Comparing the text of both disclosures (set forth in Appendix B (Walsh Cert., Ex. I)), persons skilled in the art would readily perceive that both passages were describing the same circuit -- the well-known double-bootstrap circuit *utilizing capacitors.* Neither of these passages describes a self-bootstrapped transistor operating independently.

The Court suggested that the words “capacitive coupling” in the UK application might not require the presence of a capacitor (Opinion, p. 27); however, the equivalent passage in the US application makes clear that the double-bootstrap circuit included a capacitor. This record does not support defining the entire “double bootstrap circuit” in terms of a single component, a self-bootstrapping NMOS transistor as the pass transistor.

Repeatedly during the prosecution of the Lines patents, the examiner and the applicant discussed prior art references. Whenever the applicant described her application as permitting one to avoid the use of double-bootstrapping, the argument explicitly pointed to the same circuit referenced in column 1 of the ‘602 patent, namely, the “well-known double-bootstrap circuit” “utiliz[ing] capacitors.” Here is the first of many examples:

There is nothing in Tran which suggests any way other than by using a capacitor type bootstrap circuit for supplying the word line voltage (indeed, the word “boot” used by Tran throughout, but e.g. in column 1 lines 25-28 and 37-39, arises from the existence of a capacitor-charged bootstrap circuit).[‘602 application at S002343-44].

Tran specifically teaches a capacitor type bootstrap circuit to provide a word line voltage. The applicant claims in claim 7, and in all of the other claims, an invention which provides a word line voltage that does not include a capacitor type bootstrap circuit and applies that voltage directly from a power supply. [‘602 application at S 002345]

In this passage the inventor is clearly distinguishing a prior art *capacitor*-driven circuit from her own. She does not mention self-bootstrapped transistors, and thus could not have disclaimed them standing alone.

The Court cited the inventor/examiner discussion of Tran as suggesting that the problem of capacitor-driven voltages was different from that of “double bootstrap circuits.” (Opinion, pp. 24-27.) Yet in distinguishing Tran, the inventor’s attorney stated, “Applicant points out in his [sic] disclosure that word line driving circuitry utilized capacitor bootstrap circuitry to obtain the high word line voltage.” This statement demonstrates that persons skilled in the art recognized that a capacitor boosting circuit raises the same basic problem as a double bootstrap circuit when used to drive a DRAM word line -- applying an unregulated boosted voltage pulse generated by a boost capacitor to a selected DRAM word line.

Even more emphatic is the inventor’s argument distinguishing the Yanagisawa reference:

In fact, Yanagisawa et al. fails to show any word line driver circuit for providing a V_{pp} level output based only on V_{dd} level input, without using any boosting capacitor configuration.

Boost circuits, such as the double boot strap circuit discussed in the Background of the present application suffer the disadvantage of generating uncontrolled voltages which can exceed tolerances of devices of the circuit and thus affect reliability. (S 002606)

This passage (and others like it shown in Appendix A (Walsh Cert., Ex. H) cannot be reconciled with a finding that the inventor intended to describe the main problem -- using uncontrolled boost capacitors to drive DRAM word lines -- separately from the problem of using double bootstrap circuits, or purely in terms of self-bootstrapped NMOS pass transistors.⁸ A double bootstrap circuit is a type of boosting circuit, which includes a self-bootstrapped transistor, but it is *not* limited to just that transistor.

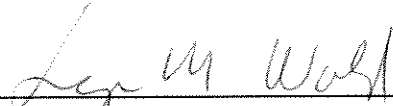
The intrinsic record does not support, in fact it contradicts, the definition of “double bootstrapping” as a single self-bootstrapped NMOS pass transistor (without a boost capacitor). Therefore, it was not appropriate to define double bootstrapping circuit without considering all the extrinsic evidence. MOSAID respectfully submits that once the Court does so, it will adopt MOSAID’s proposed definition.

III. CONCLUSION

For all the foregoing reasons, MOSAID respectfully requests limited reargument or clarification of the Court’s March 22 Order.

⁸ Indeed, the prior art capacitor boosting circuits distinguished by the inventor included devices using PMOS pass transistors. (*See, e.g.*, Walsh Cert., Ex. A, re Fujii.)

Respectfully Submitted,

By:  _____

Robert C. Kahrl
James L. Wamsley, III
Jones Day
North Point
901 Lakeside Avenue
Cleveland, Ohio 44114
(216) 586-3939

Liza M. Walsh (LW 4095)
Connell Foley LLP
85 Livingston Avenue
Roseland, New Jersey 07068
(973) 535-0500

Attorneys for Plaintiff
MOSAID Technologies
Incorporated

Dated: April 5, 2004