UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TCL CORPORATION, TCL COMMUNICATION TECHNOLOGY HOLDINGS, LTD., TCT MOBILE LIMITED; TCT MOBILE INC.; AND TCT MOBILE (US) INC.,

Petitioners

v.

TELEFONAKTIEBOLAGET LM ERICSSON,

Patent Owner

Cases IPR2015-01674, IPR2015-01676, IPR2015-01761, IPR2015-01806

U.S. Patent No. RE43,931

PETITIONER REPLY TO PATENT OWNER RESPONSE IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEWS OF U.S. PATENT NO. RE43,931

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I. INTRODUCTION

The Board should find claims 1-12, 15-26, 29-31, 33-41, and 45-69 of RE43,931 ("the '931 Patent") unpatentable. Every element of the instituted claims of RE43,931 is disclosed in the prior art, and a skilled artisan would have been motivated for several reasons to combine the teachings of the prior art references to achieve the claimed invention, and would have had a reasonable expectation of success in doing so. Patent Owner's ("PO") rebuttal arguments are based on a supposed lack of the claimed "second mode" and lack of a motivation to combine the prior art teachings, but Petitioners clearly established the requisite motivation in their original petitions (IPR2015-01674, Paper 2; IPR2015-01676, Paper 2; IPR2015-01761, Paper 1; IPR2015-01806, Paper 1) as well as thoroughly refuting those rebuttal arguments through this Reply. PO's additional arguments are, in the main, based on extraneous features not recited in the claims or based on erroneous and unsupported definitions of the person of ordinary skill in the art (POSITA). Overall, a *prima facie* case of obviousness of claims 1-12, 15-26, 29-31, 33-41, and 45-69 of the '931 Patent has been established by a preponderance of the evidence–not only the presence of each claimed element in the prior art references, but also articulated reasoning with rational underpinning–and these claims of the '931 Patent should be found unpatentable.

II. REVIEW OF PRIMA FACIE CASE AND ISSUES IN DISPUTE

Claims are not patentable where "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103. Guidance related to an obviousness analysis can be found in cases such as Graham and KSR, and related precedents. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007).

In these *Inter Partes* Reviews of the '931 Patent,[1] Petitioners have established that all claimed features of every instituted claim are present in the combined disclosures of the Palatsi (Ex. 1087), Moore (Ex. 1012), and Tiilikainen (Ex. 1088) prior art references and that such features would have been combined by a POSITA to achieve the claimed invention.

It is not disputed that the inventors of the '931 Patent did not invent contact-sensitive transducers that accept tapping contact, momentary contact, or moving contact; nor did they invent scrolling based on moving contact. Ex. 1209, 145:11-13; 146:5-8; 147:18-148:1. And such contact-sensitive transducers were known to

[1] Due to the condensed nature of this Reply related to IPR2015-01674, -01676, -01761, and -01806 ("IPRs"), all statements apply equally to every IPR pertaining to the claim, claim element or grounds for invalidity raised as well as arguments related to similar features across all instituted claims.

be used in radiotelephones. Ex. 1209, 105:13-106:4. Rather, PO's rebuttal position is that the "cited prior art, singly or in combination, fails to disclose or suggest the features of the claims as a whole." Patent Owners Response ("POR"), Paper 19, 1.[2] Specifically, PO asserts that the second mode element of the claims is not present in Moore and that a POSITA "would not be motivated to incorporate Moore's dedicated hardware required to implement the touch strips into the handheld Palatsi device." POR, 1, 32.

For the reasons set forth below, PO's rebuttal arguments are not persuasive and, in some cases, erroneous. It is respectfully asserted that Petitioners have met their burden of showing unpatentability and the Board should find the instituted claims unpatentable.

A. CLAIMED FIRST AND SECOND MODES ARE PRESENT IN THE PRIOR ART

The parties disagree as to the scope and content of the prior art references. Specifically, PO disputes whether the prior art discloses "a second mode wherein the controller is unresponsive to contact with the contact-sensitive transducer, the second mode being entered in response to an input from a user" (or in response to

[2]Hereinafter, this Reply will refer to the IPR2015-01674 Patent Owner Response, Paper 19, as "POR," unless the Patent Owner Response of the IPR2015-01676, Paper 19; -01761, Paper 19; or -01806, Paper 20 proceedings is specifically indicated.

"a user input" or "user input") as recited in independent claims 1, 16, 30, 33, 58, and 64, *e.g.*, what the parties are calling the "second mode." *See* POR, 24. There should be no dispute that this element is present in the prior art.

1. Moore Clearly Discloses the Claimed First and Second Modes

There is no dispute that the prior art, in particular Moore, discloses "a first mode wherein the controller is responsive to contact with the contact-sensitive transducer." Ex. 1209, 231:4-15. However, PO and PO's expert have taken the position that the second mode is missing from the combination of Palatsi and Moore–in fact, this is the only element asserted as missing from the combination of Palatsi and Moore. POR, 24; Ex. 1209, 231:4-15; *see also* Ex. 2057, ¶¶ 67 and 78.[3]

Yet, Moore clearly teaches the second mode as claimed in the '931 patent. For example, claims 2 and 3 of Moore disclose the features of a second mode as claimed. Claim 2 recites "wherein in response to a selectable output from the selector, the control program defines both a plurality of individually energizable discrete lengths within the touch strip, and a corresponding plurality of regions of

[3] The "second mode" rebuttal is first raised in the POR and its accompanying expert declaration of Mr. Ward, as PO did not even raise the rebuttal argument that the prior art did not contain the claimed "second mode" in its Preliminary Response. See IPR2015-01674, -01676, -01761, Paper 6; or IPR2015-01806, Paper 7.

the display screen." Ex. 1012, claim 2. In short, by being individually energizable, claim 2 of Moore effectively teaches that the touch strips can be turned on or off along predefined sections. When such predefined sections are contacted, the controller would necessarily be responsive or unresponsive to contact with the touch strip in a manner based on the energized state of the predefined section. Claim 2 also teaches that the "mode" of the touch strip as energized or not energized is entered into in response to "a selectable output from the selector," *i.e.*, entered in response to an input from a user. See Ex. 1012, claim 2; Ex. 1211, ¶¶ 18, 20-21.

Claim 3 presents more specificity related to the second mode disclosed in Moore. Claim 3 recites "wherein the control program functions to preclude input data originating when the touch strip is touched other than at positions within said discrete lengths." Ex. 1012, claim 3. By its use of the word "preclude", claim 3 is even clearer that there is a "mode" of operation in which the control program, or controller, is "unresponsive," i.e., the controller is unresponsive to contact with the contact-sensitive transducer.

By being in one instance energized and therefore controller responsive and, in another instance, not energized and therefore controller unresponsive, Moore's

controller is selectively responsive and has both a first mode and a second mode as claimed in the '931 Patent. Ex. 1211, ¶¶ 18, 20-21.

In fact, Moore's claim language tracks the second mode claim language in the '931 patent, even using the same or similar terms. *Compare, e.g.*, Ex. 1001, claims 1, 16, 30, 33, 58, and 64 ("[T]he second mode being entered in response to an input from a user.") *with* Ex. 1012, claim 2 ("[I]n response to a selectable output from the selector."); *compare also* Ex. 1001, claims 1, 16, 30, 33, 58, and 64 ("[T]he controller is unresponsive to contact with the contact-sensitive transducer.") *with* Ex. 1012, claim 3 ("[T]he control program functions to preclude input data originating when the touch strip is touched.") and Ex. 1012, claim 2 ("[T]he control program defines both a plurality of individually energizable discrete lengths within the touch strip."). Additionally, the specification of Moore teaches that "the user can establish a neutral or spacer section between adjacent assigned key intervals within the touch strip before going on to program the second and subsequent selections along the touch strip." Ex. 1012, 3:37-40. In Moore, the controller is clearly unresponsive to contact with the "neutral" sections of the contact-sensitive transducer (touch strip).

2. Patent Owner Fails to Recognize the Relevant Teachings in Moore; Rebuttal Arguments to the Contrary are Unpersuasive

Both PO and its expert Mr. Ward inexplicably fail to recognize the teachings in Moore of a first mode and second mode consistent with the claims of the '931 Patent. Rather, they have strenuously argued that "[n]either Palatsi nor Moore discloses 'a second mode wherein the controller is unresponsive to contact with the contact-sensitive transducer, the second mode being entered in response to an input from a user.'" POR, 24-30; Ex. 2057, ¶¶ 66-67, 71-72, 77-78. Considering the clearly articulated second mode in Moore, PO's position–as well as that of its expert–regarding this alleged "missing feature" is misplaced.

Alternatively, PO's position is, perhaps, founded on some other principle, such as a constrained or unsupported claim construction.[4]

For example, PO's expert has intimated that the controller must be unresponsive to contact across the entire contact-sensitive transducer. Ex. 1209, 251:10-16. However, this is not the correct analysis. A product would certainly meet the second mode requirement for infringement purposes if the controller was unresponsive to contact along a portion of the contact-sensitive transducer.

[4] But Patent Owner has expressly stated it is not advocating any such claim construction position besides those advocated by Petition, namely a construction for the terms "contact sensitive transducer… which produces an output signal" and "graphical object(s)." Petition, 11-13; POR, 23.

Therefore, a prior art document which teaches a controller which is unresponsive to contact along a portion of the contact sensitive transducer must also teach that element. *Peters v. Active Mfg. Co.*, 129 U.S. 530, 537 (U.S. 1889) ("That which infringes, if later, would anticipate, if earlier."). Such principle holds even if only certain modes of the prior art are relevant to the claims. See *Interspiro USA, Inc. v. Figgie Int'l, Inc.*, 815 F. Supp. 1488, 1512, 27 U.S.P.Q.2D 1321 (D. Del. 1993), *aff'd*, 18 F.3d 927, 30 U.S.P.Q.2D 1070 (Fed. Cir. 1994) ("[I]t is of no moment that in certain modes of operation . . . [the accused infringing device] may not operate in a way that would infringe the . . . patent. It matters only that the accused device operate in an infringing way at some time[.]").

PO also goes to great lengths to argue that the *touch strips* in Moore are not "activat[ed]" or "deactivat[ed]" or that the *touch strips* are not "enabl[ed]" or "disabl[ed]." POR, 25, 30. However, the emphasis on "touch strips" is immaterial as the claim term in dispute does not reference the touch strip; the actual claim element relates to a "*controller* [which] *is unresponsive* to contact with the contact-sensitive transducer." Ex. 1001, claim 1 (emphasis added). This is exactly what Moore teaches, "wherein the control program functions to preclude input data originating when the touch strip is touched other than at positions within said discrete lengths." Ex. 1012, claim 3; Ex. 1211, ¶ 18. Moreover, when questioned

at deposition, PO's expert admitted under oath that the claims do not require "activating or deactivating [touch] strips." Ex. 1209, 233:1-6. This is because the claims relate to inaction by the controller, not the contact-sensitive transducer (e.g., the touch strip). By conflating touch strips with the claim's requirement of a "controller," PO is simply directing attention away from the proper claim limitation, as well as away from the disclosure of these claim limitations in the prior art.

PO also argues that Moore's embodiment where the function of the touch strips can be disabled and that function transferred to another touch strip (*see* Ex. 1012, 4:28-36), *i.e.*, so-called "switching," does not read on the claims because the claims require "a **second mode** of operation of a **single** component." POR, 24. Even if this is a requirement of the claim, which it is not, Moore would still meet such a requirement. For example, in its Petition, Petitioners note that Moore teaches activating and deactivating touch strips. Petition, 17. Also, for example, Moore discloses a control program which is programmed to preclude input data originating from certain parts of a touch strip, *i.e.* a single touch strip with a plurality of individually energizable discrete lengths. Ex. 1012, claims 2 and 3, 3:37-40; Ex. 1211, ¶ 18.

To muster support for its argument, PO cites to certain of Dr. Wolfe's deposition transcript related to "switching." POR, 25. Specifically, PO states that Dr. Wolfe "acknowledged that Moore does not explicitly describe that a touch strip is disabled or made unresponsive to contact." *Id.* Moreover, PO argues that Wolfe "acknowledged that the term 'switching' as used in Moore does not necessarily mean selecting two touch strips to be operable while another two touch strips are inoperable." *Id.* This is a mischaracterization of Dr. Wolfe's full testimony based on selective excerpting. Dr. Wolfe specifically stated that Moore "teaches the concept" of disabling one bank of touch strips and enabling another bank of touch strips. Ex. 2003, 99:9-100:1. He also testified, in the full, that as he understands it, Moore teaches switching a bank of touch strips to mean disabling one touch strip that had a functionality and switching that functionality to another strip. *Id*., 99:13-100:5.

> Q: Where does it say it's disabling one bank of touch strips?
>
> A: It doesn't say that. It teaches the concept through the teachings of the patent as a whole. Moore teaches that you can accomplish substantial scrolling capabilities or soft-button capabilities using two touch strips, and then he teaches that there's an interesting embodiment in which you have four, two sets of two, in which you don't need all four, but you can switch between them.

> And I think a person of ordinary skill reading that would understand that these switching between them means either selecting two of them to be operable or the other two to be operable.
>
> Q: Can switching have another meaning?
>
> A: I guess, hypothetically. But that's not the way I would understand it in the context of the way it's taught in this patent.

Id.

Dr. Wolfe's testimony is consistent with the teachings of Moore, specifically that one bank of touch strips with a scrolling functionality can be disabled (*i.e.*, second mode). Ex. 2003, 99:13-100:1; Ex. 1012, 4:20-28, 4:33-36. Dr. Wolfe's testimony is also consistent with the testimony that the controller can be unresponsive to contact with the contact-sensitive transducer. Ex. 1012, claims 2-3 and 3:37-40.

* * *

As set forth and discussed above, PO's pervasive assertion that there is "no disclosure" in Moore of a second mode is unequivocally wrong. Furthermore, whether grounded in unsupported claim constructions or absent claim language, or related to "switching" "touch strips" (POR, 24-30), PO's arguments are nothing other than a red herring. Under the broadest reasonable interpretation standard, the Board should find that the claimed first and second modes are disclosed in the

combination of Palatsi and Moore and that no claim elements recited in the instituted claims of the '931 patent are missing from the combination of Palatsi and Moore.

B. MOTIVATION TO COMBINE

As outlined above in section II.A., the combination of Palatsi and Moore discloses every element of every instituted claim. PO has not denied this except, as addressed above, to attempt to argue that Moore does not disclose the second mode. *Supra*, 3-4.

Petitioners have demonstrated that each of the elements of the claims was known in the combination of Palatsi and Moore. *See In re Royka*, 490 F.2d 981, (establishing a *prima facie* case of obviousness requires that the prior art references (or references when combined) teach or suggest all of the claim limitations). Additionally, Petitioners have shown that "a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so." *Cf. Volkswagen Grp. of Am., Inc. v. Velocity Patent LLC*, IPR2015-00276, Paper 8, slip op. at 10 (PTAB Jun. 1, 2015) (referring to *KSR*, 550 U.S. at 418); *Apotex Inc. v. Wyeth LLC*, IPR2014-00115, Paper 94, slip op. at 11 (Apr. 20, 2015) (quoting *Procter & Gamble Co. v. Teva Pharms.*

USA, Inc., 566 F.3d 989, 994 (Fed. Cir. 2009)); *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). In particular, Petitioners have provided sufficient motivations to combine the disclosures in the cited references and to show the claims obvious in view of the combination of Palatsi with Moore and in view of the combination of Palatsi with Moore and Tiilikainen[5]. *See, e.g.*, Petition, 18-22, 38-39, 55-58.

Petitioners present the following comments and analysis demonstrating the unpatentability of the claims and in rebuttal to the PO's Response.

1. Motivation to Combine is Found in the Prior Art

A POSITA would have had the motivation to combine the teachings of the prior art references to achieve the claimed invention with a reasonable expectation of success. In fact, more than sufficient motivation to combine Palatsi and Moore can be found in the references themselves.

For example, both Palatsi and Moore relate to the same technology: telephones. Ex. 1012, 1:17, Ex. 1087, 1:6; Ex. 1211, ¶¶ 16-17. Palatsi teaches an input device, which in Palatsi is a "scroll-and-select" system embodied in the form of soft-keys. Ex. 1087, 1:15-20, 2:26-29, 2:57-59. Palatsi also teaches that touch sensors may be used as an input device in place of the soft-keys. *Id*. at 4:16-22.

[5] PO did not state independent bases for why a POSITA would not be motivated to combine Tiilikainen with Palatsi and Moore and this Reply only addresses PO's comments about the combination of Palatsi and Moore.

Moore teaches the use of a touch sensor that acts like a soft-key. Ex. 1012, Abstract ("By selecting an appropriate programming mode the touch strips can be made to present a series of programmable or soft keys.") The references teach that touch strips are the physical/functional equivalent of soft-keys and can be used as an input device and that soft keys, like those taught by Palatsi, can be substituted with touch strips, like those taught by Moore. Additionally, Moore teaches that using soft keys can help reduce the size imprint of a keyboard. Ex. 1012, 1:9-12. Moore also teaches that soft key keyboards have previously been used in telephones. Ex. 1012, 1:15-22.

Further, Moore is readily combinable with Palatsi because Moore teaches the claimed scrolling functionality using a contact-sensitive transducer (touch strips) and the second mode. It is not disputed that Moore teaches this scrolling functionality with a contact-sensitive transducer. Ex. 1012, 4:20-28 ("By pressing the scrolling key, the terminal is programmed to permit the displayed text or graphics to be moved vertically or laterally to display adjacent parts of the displayed matter of which the currently displayed field is just a part stored in memory. To operate the terminal in this mode, the user merely strokes the touch strips along their length in the direction in which the displayed field is to move."); *See also* Ex. 1012, 3:22-25 ("Typical functional keys associated with the touch

strips are soft-key designation, menu selection, cursor generation, graded control and scrolling.")

Therefore, simply by reading the disclosures of Palatsi and Moore, a POSITA would have known that the soft-keys in Palatsi could easily be replaced by the touch strips of Moore. Ex. 1205, ¶¶ 141-148; Ex. 1211, ¶ 24 . Once the soft keys of Palatsi are replaced with the touch sensitive input device of Moore, one could use the touch sensitive input device in all the ordinary ways and for all the functions associated with such devices, including those recognized by Moore, such as scroll by tapping, *i.e.*, mimicking the pushing of the replaced soft-keys, or scrolling by swiping as Moore teaches. Ex. 1012, 1:6-12 ("To limit the keyboard size, a known development of the conventional keyboard has several blank or soft keys which can be given any of a number of functional designations."); 3:22-25 ("Typical functional keys associated with the touch strips are soft-key designation, menu selection, cursor generation, graded control and scrolling."); 4:20-28 ("By pressing the scrolling key, the terminal is programmed to permit the displayed text or graphics to be moved vertically or laterally to display adjacent parts of the displayed matter of which the currently displayed field is just a part stored in memory. To operate the terminal in this mode, the user merely strokes the touch strips along their length in the direction in which the displayed field is to move.")

Taken as a whole, these teachings provide sufficient motivation for a POSITA to combine Palatsi and Moore to achieve the claimed invention. Ex. 1205, ¶¶ 141-148; Ex. 1211, ¶ 24.

Moreover, the Board has previously found these claims (minus the limitation of the first and second modes) obvious, and in doing so, rejected the exact reasoning put forth by PO in its response. Namely, the Board has previously sustained the Examiner's obviousness rejections of claims in this patent (minus the limitation of the first and second modes) whereby it was determined to be obvious to incorporate a contact sensitive transducer from one reference to replace a mechanical input device, such as a mouse or trackball scrolling mechanism. Ex. 1007, 396. The Board found this combination was "tantamount to the predictable use of prior art elements according to their established functions." Ex. 1007, 397 (citing *KSR Int'l Co. v. Teleflex, Inc.* 550 U.S. 398, 417 (2007)). The Board further found that replacing a mechanical input device (in that instance a thumbwheel) with a contact sensitive transducer "would yield predictable results" and "[s]killed artisans would have recognized several benefits from such a substitution, namely reducing the number of moving parts (which can wear out and fail over time), as well as the convenience of enabling the user's finger or thumb to be used as the position pointer in lieu of a wheel." Ex. 1007, 397.

Here, the Palatsi and Moore references are similar to the references in the prior obviousness rejection upheld by the Board. As in the prior obviousness rejection, a primary reference (Palatsi) teaches a mechanical input device (a "scroll-and-select" system embodied in the form of soft-keys) and a secondary reference (Moore) teaches a contact sensitive transducer and its use as an input device.[6] For similar reasons as those stated by the Board in deciding the appeal of the reexamination application, the Board in these IPRs should reach the same conclusions of unpatentability and find the instituted claims obvious based on Palatsi in view of Moore.

2. Motivation to Combine Moore is not Based on Hindsight

PO suggests that Petitioners' motivation to combine Moore with Palatsi is based on hindsight. POR, 30. However, this is not true. The references themselves teach a POSITA that adding the touch strips of Moore in place of the soft keys of Palatsi would give an added benefit of disabling input arising from inadvertent contacts with the input device. The basis for this combination is not a new problem caused by the introduction of the touch strips themselves.

[6] The references in this IPR go even further to support the combination and obviousness than the references considered by the Board in the appeal in that, here, the primary reference (Palatsi) also expressly teaches the substitution of touch sensors (as in the secondary reference Moore) as an input device in place of soft keys. *See* supra, 13-14; Ex. 1087, 4:16-22.

First, combining Palatsi and Moore in the manner proposed above is based on the express disclosures and teachings in the prior art references advocating replacing soft-keys with touch strips (see Ex. 1087, 4:16-22), which was unequivocally known by a POSITA at the time of the purported invention. In each instance, there is no hindsight. *Id.* Second, incorporating disclosed features from Moore, *i.e.*, touch strips, for the soft-keys of the device disclosed by Palatsi would have been considered by a POSITA for the separate reason that, by adding Moore in the configuration where there are touch strips on either side of the phone, input from unintended contacts with the input device is avoided. Petition, 38-39; Ex. 1211, ¶ 22. Avoiding input from unintended contact is one of the benefits of Moore. Ex. 1012, 2:64-68 ("The time constant of the filter circuit is appropriately set so as to register most strip actuations which are deliberate and so as not to register most of the touch strip contacts which are unintended.").

In each instance, there is no hindsight. It is not hindsight to combine references based on the express substitution of equivalent elements expressed in the references themselves or based on the motivation to achieve a benefit set forth in those references. *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971) ("Any judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was

within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper."); *Ex Parte Alan Edward Jones*, 2016 WL 3345720, at *2 (PTAB Jun. 14, 2016) ("Our reviewing court guides us that the strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination.") (citing *In re Sernaker*, 702 F.2d 989, 994-95 (Fed. Cir. 1983)).

More particularly, Moore (Ex. 1012, 2:57-68) and the prior art generally (Ex. 1211, ¶¶ 20, 22) recognized that it is beneficial to avoid unintended contacts. Moore also clearly teaches that it is beneficial to place touch control strips around the periphery of a telephony display in order to support scrolling and selection on the display. Ex. 1012, Fig. 1, 1:15-26, and claim 5. Additionally, Palatsi teaches a telephony display that requires control of scrolling and selection and suggests touch sensors as a solution. Ex. 1087, 4:16-20, 2:40-46; Ex. 1205, ¶ 135; Ex. 1211, ¶ 16. Therefore, the combination of the teachings of Palatsi and Moore to place the touch strips adjacent or to the side of the display is the natural result of an understanding of the teaching in the two patents. Ex. 1205, ¶¶ 141-148; Ex. 1211,

¶ 30. Such placement of the touch strips would also include the already present feature of the touch strips having a means to avoid unintended contact. The problems and solutions are right in the prior art references themselves, not hindsight as wrongfully suggested by PO. A POSITA would have recognized the benefits of, for example, the side mounted touch sensors if they were incorporated into Palatsi directly from the teachings in the prior art patents. Ex. 1205, ¶¶ 141-148; Ex. 1211, ¶ 30. Accordingly, none of Petitioners' arguments are gleaned from the '931 patent disclosure and impermissible hindsight is not implicated by Petitioners' position.

Because Palatsi expressly teaches substituting touch strips as input devices and additionally because Moore teaches the added benefit from using touch strips for avoiding responses from unintended contacts with the input device, Petitioners' combination of Palatsi and Moore is not a hindsight solution to a problem found, *e.g.*, from the disclosure of the '931 patent, and PO's hindsight arguments should be rejected.

3. Additional Observations on the Combination of Palatsi and Moore

The Petition plainly sets forth multiple reasons why a POSITA would have combined Palatsi and Moore in the manner described therein with nothing more than predictable results, and PO's assertions fail to rebut this *prima facie* case of

obviousness. Petition, 18-22, 38-39. Rebuttal assertions by PO include that "[a] POSITA would not have been motivated to incorporate Moore's dedicated hardware required to implement the touch strips into the handheld Palatsi device." POR, 32. As an example, PO argues that additional discrete hardware and associated "significantly more" modification would have been required. *See, e.g.*, POR, 34-38. PO also argues that the state of the technology at the time would have resulted in power and size constraints that would have negatively impacted the combination of Palatsi and Moore and required undue experimentation. *See, e.g.*, POR, 39-42. These various assertions are contradicted by the prior art references themselves, as well as by Petitioners' evidence of the state of the art.

i. "Significantly More" Modification Would Not Have Been Required to Implement the Combination and Success Would Have Been Reasonably Expected Without Undue Experimentation

Multiple redundant components and "significantly more" modification would not have been necessary to successfully implement the combination of Palatsi and Moore to arrive at the claimed invention.

With respect to the arguments regarding the power supply, Moore nowhere requires separate power supplies for each of his touch strips, but simply discloses that "the touch strip has a power supply to establish the voltage gradient along the resistive substrate." Ex. 1012, 2:38-40. Indeed, it was exceedingly commonplace

at the time to use a single power supply for providing voltage to multiple components. Ex. 1211, ¶ 25. Moore nowhere suggests going against this common knowledge. Thus, contrary to PO's assertions (POR, 35), each of Moore's touch strips would *not* have required their own power supply to establish the voltage gradient along the resistive substrate.

The power supply is but one example of how PO inaccurately presents their proposed bodily combination of Palatsi and Moore and the number of components allegedly needed in such a combination. According to PO, not only the power supply, but also the filter/buffer unit, analog-to-digital converter, select/control logic circuit driven by timing impulses from a clock circuit, an interface circuit, and a microprocessor unit "need to be incorporated ***four times*** because the embodiment from Moore the Petitioner relies upon requires four touch strips." POR, 36 (emphasis in original). However, bodily incorporation – as proposed by PO – is not the standard. *In re Keller,* 642 F.2d 413, 425, 208 U.S.P.Q. 871, 881 (CCPA 1981); Decision Institution of *Inter Partes* Review, Paper 7, 14.

Furthermore, while PO argues for individualized incorporation of components and Mr. Ward portrays the A/D converter, clock, select/control logic, and filter/buffer as ***discrete*** components each needing to be reproduced ***four times*** (Ex. 1210, 318:21-320:5), the state of the art readily integrated such features for

common use, *e.g.*, by all the touch strips. The state of the art in December 1997 teaches that both microcontrollers and discrete A/D converters existed prior to the purported invention which were suitable for mobile phones and included all of these functionalities on ***one chip***, such as the 8XC552/562 microcontroller and the 11-input TLC1541 analog-to-digital converter. Ex. 1211, ¶¶ 26-29; Ex. 1212, 1;[7] Ex. 1213, 1, 50-53. In fact, "CMOS technology that was in widespread use by 1997 regularly included the clock, select/control logic, and any required filter/buffer into each A/D converter and/or microprocessor, as one chip rather than discrete components." Ex. 1211, ¶ 26.

Indeed, as Dr. Wolfe discussed in his original declaration, microprocessors would ordinarily have included analog-to-digital converter circuitry capable of connecting to the touch strips of Moore. Ex. 2003, 93:14-19. PO calls this fact "unsubstantiated," and Mr. Ward goes so far as to assert that "given the state of the art at the time, ***no such hardware would have existed*** in any device such as the representative radiotelephones cited above." POR, 41; Ex. 2057, ¶ 97 (emphasis added). This is demonstrably incorrect because such hardware was readily

[7] The TLC1541 analog-to-digital converter (Ex. 1212) was available at the time of the filing of the patent, integrated an 11-input A/D converter, clock, select/control logic, and filter/butter all on one chip, consumed about 6 mW of power in full operation, and occupied only 1 cm^2 of space, making it well-suited to mobile phone use. Ex. 1211, ¶ 27.

available. As but one example, the 8XC552/562 microcontroller, which was available prior to the date of the purported invention and was suitable for mobile phones, ***included*** an eight-input analog-to-digital converter. Ex. 1210, 347:16-349:11, 351:6-351:15; Ex. 1211, ¶ 28; Ex. 1213, 2, 46.

Accordingly, the combination of Palatsi and Moore would not have included multiple A/D converters and other circuitry as depicted by PO. Instead, one of ordinary skill would have readily combined Palatsi and Moore and could have readily utilized one of the available microcontrollers or discrete A/D converters with the ability to allow for at least four analog-to-digital inputs. Ex. 1211, ¶¶ 26-29 (The components PO argues need to be incorporated four times 'could have been incorporated into a single microcontroller that would have already been suitable for use as a mobile-phone controller supporting many input/output functions requiring about 0.75 in^2 of board space and supporting low-power operation . . . These parameters would have easily allowed the Palatsi phone, with the addition of the touch strips from Moore, to 'be held in a user's hand such that the rear surface confronts the user's palm,' which is the only size requirement of the '931 patent."); Ex. 1012, 2:40-43; Ex. 1210, 336:4-10. It is notable that even

PO's expert, Mr. Ward, ultimately suggests these components could be integrated or used in common. Ex. 2057, ¶ 86.[8]

As discussed above, a POSITA would have readily utilized one of the many microcontrollers available at the time, thereby entirely avoiding PO's portrayed need for many redundant components. However, even in PO's purported regime where "[t]he analog to digital converter is a separate component from the microprocessor," the A/D converter, filter/buffer circuit, clock circuit, and select/control logic unit would ***not*** need to be reproduced four times as alleged by PO. POR, 37-38. Rather, as discussed above, A/D converters that existed prior to the purported invention ***included*** all of these functionalities and could have handled four A/D inputs, such as the TLC1541. Ex. 1211, ¶ 27; Ex. 1212. Thus, even if the microprocessor were kept separate from the A/D converter, clock, select/control logic, and filter/buffer, a POSITA would still have recognized that such functionalities could all be performed by one discrete A/D chip, without the need for redundant components as argued by PO.

[8] During deposition, Mr. Ward was reluctant to form even a preliminary opinion on whether or not the clock circuit and the power unit could actually be made common to all four of the touch strips, but suggested that it would be possible because "it's very hard to say on anything that something is absolutely impossible." Ex. 1210, 324:16-325:4.

PO also opines that size considerations teach against combining the prior art, stating that "the elements shown in Fig. 3 of Moore … are not mere functional elements that can be readily programmed into the existing hardware of Palatsi … [t]hese are discrete integrated circuits which will take up already limited real estate on the existing printed circuit board of Palatsi's phone." (POR, 37). But this statement completely ignores that, prior to the purported invention and as explained above, many of these components had already been integrated into multifunction integrated circuits of the time, could have been readily integrated by a POSITA into Palatsi's digital processing section 4, and would not have required discrete integrated circuits. Ex. 1211, ¶¶ 26, 29. Contrary to the opinion of Mr. Ward, the so-called "discrete" integrated circuitry allegedly required by the combination could have and, in fact, *were* being incorporated into microcontrollers and A/D converters themselves prior to the time of the purported '931 invention. Ex. 1211, ¶¶ 26-29; Ex. 1213, 50; Ex. 1212, 1.

As identified by Dr. Wolfe based on his actual phone design experience, hardware that was actually available at the time of the purported invention would have removed the need for the extra accompanying hardware that PO postulates. Ex. 2057, ¶ 97, Ex. 1211, ¶¶ 26-29. Correspondingly, the inclusion of multiple functions into integrated circuits of the time would have addressed size and power

constraints related to radiotelephony. Ex. 2057, ¶ 97, Ex. 1211, ¶¶ 27-29. Use of existing technology and integrations already in the state of the art would have been common sense, and there would have been little need for experimentation, much less for undue experimentation. PO's conclusions that a POSITA would not have combined the elements in Palatsi and Moore nor expected the combination of Palatsi and Moore to be successful is based in error. POR, 37. Likewise, PO's conclusion of the need for undue experimentation is also based in error. POR, 39.

ii. Testimony by PO's Expert is Erroneous and Unsupported and PO's Arguments Relying Thereon are Tantamount to Unsupported

Errors in Mr. Ward's testimony make PO's arguments relying on such testimony (variously set forth as purported problems with integration, configuration, additional modification, power, and size requirements) erroneous and effectively unsupported. As such, both the testimony and the arguments should be ignored.

As already noted above, Mr. Ward's expert opinion that "given the state of the art at the time, ***no such hardware would have existed*** in any device such as the representative radiotelephones cited above" (Ex. 2057, ¶ 97 (emphasis added); POR, 41) – referring to microprocessors that included analog-to-digital converter circuitry capable of connecting to the touch strips of Moore – is demonstrably

incorrect. The 8XC552/562 microcontroller identified by Petitioners is one example refuting Mr. Ward's and PO's positions. Ex. 1210, 347:16-349:11, 351:6-351:15; Ex. 1211, ¶¶ 28-29; Ex. 1213, 2, 46. Considering microcontrollers available at the time of the invention, Mr. Ward's and PO's statements are surprisingly uninformed.

Additionally, Mr. Ward cites to a "representative device" to support his opinions and knowledge of the state of the art. Ex. 2057, ¶ 87 and Ex. 2060; Ex. 1210, 330:17-20. His knowledge of the representative device is wholly deficient and dismantles both his opinions and PO's arguments regarding what was known at the time of the invention. POR, 35-40 (relying on the knowledge of a POSITA). Mr. Ward points specifically to a component labeled as an "A/D Converter" from Exhibit 2060 (an image of the internal circuitry of a mobile phone). *Id.* However, Mr. Ward's knowledge of the components inside his "representative" device (which he identifies as having a separate A/D converter ***for a microphone***) lacks the most basic information for determining the capabilities of these components.

As an example, although this exhibit (a blog post from a course in India) has no indicia or description of the model of the device or its time frame (see Ex. 1210, 310:7-311:6), Mr. Ward nevertheless opines that this exhibit is a picture of a "T200 released in 2002, [and is] representative of typical components found in mobile

phones in 1997." Ex. 2057, ¶ 87. But Mr. Ward could not identify in this exhibit where this phone was identified as a T200 or that it was from 2002. Ex. 1210, 311:20-313:3.

Furthermore, Mr. Ward could not identify the model number or manufacturer of the alleged A/D converter inside the alleged T200, nor could he even confirm that this A/D converter would be able to analog to digitally convert the input from one of Moore's touch strips. Ex. 1210, 313:4-11, 330:12-331:20. Indeed, Mr. Ward was not aware how many input channels the A/D converter ***even had***. *Id.*, 338:20-339:7 ("you don't know how many input channels are in the A-to-D converter of Paragraph 84. Correct? A I'll add yes to my previous answer. For the record.").[9]

In fact, Mr. Ward provided no testimony or other information that identifies the device in Ex. 2060 or any of its components or capabilities, or that otherwise demonstrates his knowledge of the state of the art in 1997. This is despite the fact that the T200 allegedly shown in Ex. 2060 is a product of Sony Ericsson and PO Ericsson presumably could have provided such information but did not. Considering this lack of knowledge by Mr. Ward, it naturally follows that Mr.

[9] Mr. Ward further acknowledged that the number of channels an A/D converter would need for handling four of Moore's touch strips would depend on whether addition multiplexing circuitry is included. Ex. 1210, 336:4-17. Where multiplexing is used, the number of required A/D channels would be even less.

Ward's opinions on this topic and the general state of the art in 1997 are not reliable at all and certainly are not sufficiently reliable to rebut the *prima facie* case of obviousness established by Petitioners.[10]

* * *

A POSITA would have found the proposed combination of Palatsi and Moore obvious for the various reasons set forth by Petitioners. As explained above, Petitioners have established that none of the "concerns" raised by PO would have been applicable. Ex. 1211, ¶ 23-29. Additionally, PO's main evidence that the incorporation of Moore's touch strips into Palatsi would not be obvious is based on a faulty analysis from Mr. Ward. *See, e.g.*, Ex. 2057, ¶ 87; Ex. 1210,

[10] As between the two, Dr. Wolfe is much more qualified than Ericsson's expert Mr. Ward to make determinations related to adding the touch strips of Moore to Palatsi and any implications of such a combination/modification, and related to the knowledge of a POSITA. On the one hand, well before the filing of the '931 patent, Dr. Wolfe was working on the development of the Simon portable telephone. Ex. 2003, 26:11-23; Ex. 1209, ¶ 84. In fact, Dr. Wolfe worked on touchscreen prototypes for the prior art IBM Simon, which allowed users to tap on a contact-sensitive transducer and scroll by both tapping on virtual scroll arrows and to pan (scroll) through a fax by swiping a stylus across a screen. Ex. 2013, 41, 45-46; see also Ex. 1209, 108:12-109:18. On the other hand, Mr. Ward has no experience with mobile phones or mobile phone touchscreen development or touch input devices prior to the filing of the '931 patent. Ex. 1209, 56:17-57:2. In fact, Mr. Ward's work with mobile phones after the filing date of the '931 patent solely relates to his work as an expert/fact witness in patent infringement cases. Ex. 1209, 57:3-67:19. Mr. Ward has never in his career worked on designing touchscreens or touch input devices for mobile phones. *Id.* at 67:20-68:8.

313:4-11, 330:12-331:20, 338:20-339:7. As a result, PO's assertions fail to rebut the *prima facie* case set forth in the Petition.

In contrast, existing controllers and/or A/D integrated circuits could have replaced the hardware Mr. Ward claims would need to be incorporated into the Palatsi device four times. Ex. 1211, ¶¶ 25-29. Such integrated circuits would have used a minimal amount of board space and supported low-power operation. *Id.*, ¶¶ 27, 29. As an example, microcontrollers available at the time had four to eight A/D input pins, plenty to support the additional touch strips. *Id.* at ¶ 28. These available microcontrollers and analog-to-digital converters were well-suited to mobile phone use. *Id.* at ¶¶ 27-29. Therefore, using technology known at the time the '931 patent was filed would have made incorporating the touch strips from Moore into Palatsi both obvious and predictable. For all the reasons stated above, PO's arguments regarding barriers to combining Palatsi and Moore, including size, power requirements, and complexity of incorporating multiple features, should be disregarded.

C. FEATURES IN DEPENDENT CLAIMS EMPHASIZED BY PO ARE ALSO FOUND IN PRIOR ART AND ARE OBVIOUS

1. The Combination of Palatsi with Moore Teaches the Momentary Contacts Limitation of Claim 11

PO's assertion that claim 11 is not obvious is based on an incorrect reading of Moore's disclosure. In fact, claim 11 is obvious over Palatsi and Moore for the reasons set forth in the Petition. As explained therein, a POSITA would have combined Palatsi with Moore to include Moore's touch strips and corresponding functionalities, including moving-contact-based scrolling and menu selection.

The controller of Palatsi and Moore is operative, responsive to the contact-sensitive transducer, to detect a momentary contact with the contact-sensitive transducer, and to initiate the action associated with the identified graphical object responsive to detection of the momentary contact, as recited by claim 11. For example, a POSITA would have known to perform Palatsi's disclosed functionality of pressing a soft key "to select the currently-displayed menu item and cause the processor to take the appropriate action corresponding to that item" using the touch strip of Moore. Petition, 52. As described, "appropriate actions" could include, e.g., entering the "lights" menu or the "messages" menu, changing to the next menu level, reverting to the previous menu level, changing to display just one menu, and turning on lights of the mobile telephone. Petition, 52-53.

PO argues that the combination of Palatsi and Moore does not disclose or suggest the operations of claim 11 because Palatsi is only responsive to momentary contacts and not moving contact. POR, 45-46. This is both incorrect and irrelevant – the combination of Palatsi and Moore includes Moore's touch strips, which ***do*** respond to moving contact. Ex. 1012, 4:20-28 ("By pressing the scrolling key, the terminal is programmed to permit the displayed text or graphics to be moved vertically or laterally . . . the user merely strokes the touch strips along their length in the direction in which the displayed filed is to move."); *In re Keller*, 642 F.2d 413, 426 ("one cannot show non-obviousness by attacking references individually where … the rejections are based on combinations of references."). In fact, Moore particularly claims touch strips which respond to moving contact:

> A terminal as claimed in claim 1 particularly adapted for a scrolling display operating mode wherein, in response to a selected output of the selector, the control program prepares the microprocessing unit to receive scrolling data, the control program further responding to an input from the touch strip corresponding to unidirectional stroking thereof to drive the display means to scroll the displayed image.

Ex. 1012, claim 5.

PO also argues that "Moore simply does not provide for the scrolling function and the menu function to work in conjunction." This is also incorrect and, in addition, is irrelevant to the ***combination*** of Palatsi and Moore set forth in the

Petition. Particularly, the primary reference Palatsi already teaches a scrolling function and a menu function that work in conjunction. For example, Palatsi describes that a user may scroll through options within a menu, then pause and press the key again to select the currently-displayed menu item and cause the processor to take the appropriate action corresponding to that item. Petition, 49-51. Palatsi also states that a touch strip input can be used in place of the key-based input. With both these disclosures, a POSITA would have readily combined Moore with Palatsi to replace the key-based input with touch strips such that touch strips are used for scrolling and for selecting Palatsi's menu items. Petition, 52-53 ("Palatsi teaches that the selection… can be made by waiting for a predetermined time period and then pressing the soft key again (i.e., pressing the touch strip of Moore as implemented on the mobile telephone of Palatsi) to cause the controller to initiate an associated action.").[11] Thus, the combination provides a scrolling function and menu function that work in conjunction.

[11] At one point, the Petition states that "it would have been apparent to a POSITA to initiate the scroll-and-select menu selection functions described with respect to Figs. 3 and 4 of Palatsi … by pressing the touch strip location corresponding to a ***programmed menu selection function key***, as described in Moore." Petition, 52 (emphasis added). It is clear from the subsequent text that this refers to "pressing the touch strip … at a location adjacent to the particular displayed title" (Ex. 2012, 3:47-49), as programmed for the touch strip in menu selection functionality.

Furthermore, though irrelevant to the combination, PO's assertion that "Moore simply does not provide for the scrolling function and the menu function to work in conjunction" is incorrect. POR, 46-47. As acknowledged by PO's own expert during deposition, and directly contrary to the POR, Moore does ***not*** disclose that a "***new*** list of titles" is displayed when the user switches from the scrolling function to the menu selection function. POR at 47; Ex. 2057, ¶ 115. Rather, Mr. Ward's reference to "new" in this context actually is referring to Moore's disclosure that "[b]y pressing the menu selection function key, a program is selected which enables the user to select one title from a list of displayed titles merely by pressing the touch strip … [o]nce having selected this title from the list the user then can perform any of a number of manipulating functions, for example displaying a ***further set*** of possible selections within the broad title selected." Ex. 1021, 3:45-53 (emphasis added); Ex. 1210, 361:2-17 ("my intent was to paraphrase without changing the meaning. And I believe I pointed to the word 'new' and the word 'further set' as intending to have the same meaning.").

Whether or not a "new" set (i.e., a "further set") of possible selections are displayed ***after*** selecting a title has no bearing on the titles displayed when the user enters the menu selection function. There is simply no indication in Moore that these displayed titles must be "new" or a further set. Instead, Moore's various

operation modes would have suggested to a POSITA that a user may switch between them ***without*** bringing up a new screen each time, as emphasized by Moore's description of "enabl[ing] the user to select one title from a list of display***ed*** titles" – *i.e.*, titles that are already displayed. Ex. 1012 at 3:45-49 (emphasis added).

As explained by the Petition, a POSITA would have combined Palatsi and Moore to result in Moore including the menu selection function, and touching Moore's touch strip to select from Palatsi's menu after scrolling through that menu, and such a combination plainly discloses the momentary contact recited by claim 11, *i.e.*, "wherein the controller is operative, response to the contact-sensitive transducer to detect a momentary contact with the contact-sensitive transducer and to initiate the action associated with the identified graphical object responsive to detection of the momentary contact." Petition at 51-53. Thus, as explained in the Petition, the combination of Palatsi and Moore meets all the elements of claim 11.

2. The Combination of Palatsi with Moore and Tiilikainen Teaches the Momentary Contacts Limitation of Claims 12 and 49

As described above, Petitioners have shown how it would have been obvious to combine Palatsi with Moore to incorporate Moore's second mode. Petitioners also fully described how the combination of Palatsi with Moore and Tiilikainen

rendered claims 12 and 49 obvious. PO has done nothing to rebut Petitioners' obviousness combination which includes Tiilikainen except to conclude that Tiilikainen does not "describe scrolling by way of **moving contact**." POR, 49 (emphasis in original). In fact, PO also argues that Palatsi does not include this feature. POR, 16.

However, Petitioners did not combine Tiilikainen with Palatsi and Moore in order to provide the combination scrolling based on moving contact; Moore clearly provides that function and feature. Ex. 1012, 4:20-28 ("By pressing the scrolling key, the terminal is programmed to permit the displayed text or graphics to be moved vertically or laterally . . . the user merely strokes the touch strips along their length in the direction in which the displayed filed is to move.").

As such, PO has provided no new arguments to rebut the combination of Palatsi with Moore and Tiilikainen. Therefore, claims 12 and 49, as described above, are obvious for the same reasons as discussed previously.

III. REPLY TO OTHER POINTS RAISED BY PO, INCLUDING PO'S ASSERTION OF UNEXPECTED RESULTS

Many of PO's additional arguments against invalidating the '931 patent are based on unexpected results of features that are not found in the claims of the '931 patent. Yet PO's attempts to provide evidence of secondary considerations of nonobviousness are inadequate and, furthermore, PO has not provided any nexus

between the claims and secondary considerations as is required to defeat POs' evidence of motivation to combine Palatsi, Moore, and Tiilikainen. *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311-1312 (Fed. Cir. 2006).

As admitted by PO's expert, PO's assertions of unexpected results are based entirely on a purported "unexpected property" of the '931 claims – namely, that "a user can swipe a contact-sensitive transducer to achieve scrolling while the radiotelephone is held in a one-handed fashion." POR, 43-44, Ex. 1210, 293:18-294:18. PO fails to explain where or how the capability for a "one-handed swipe" is present in the claims themselves, instead referring only to the '931 specification.[12] Ex. 1210, 294:19-299:4; POR, 43; Ex. 2057, 50. This is improper. "Objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support." *In re Clemens,* 622 F.2d 1029, 1036 (CCPA 1980); *In re Lindner,* 457 F.2d 506, 508 (CCPA 1972) (disregarding unsupported statements in the specification about unexpected results of the claims). Even PO's expert agreed that the word "swipe" used in PO's argument does not appear in the '931 claims. Ex. 1210, 296:21-296:1. An

[12] Even the portion of the '931 specification referenced by the POR does not mention one-handed swiping, instead merely stating that "[b]y providing strips on both sides of the radiotelephone housing 110, the radiotelephone 100 may be used in either a right-handed or left-handed fashion." POR, 43; Ex. 1001, 5:44-48.

assertion of unexpected results without tying any such results to the claims is improper.

Assuming *arguendo* that the '931 claims did include one-handed swiping capability, PO has completely failed to explain why this was an unexpected, rather than expected property. Indeed, a POSITA would have expected to be able to "swipe a contact-sensitive transducer to achieve scrolling while the radiotelephone is held in a one-handed fashion" if touch strips were provided on both sides of a radiotelephone housing, as described by the '931 specification. POR, 43; Ex. 1001, 5:44-48. This alleged result of the purported invention would have been fully expected, rather than unexpected. Such expected results weigh in favor of obviousness, rather than against it. *In re Gershon,* 372 F.2d 535, 538 (CCPA 1967) ("Expected beneficial results are evidence of obviousness of a claimed invention.").

In other aspects of this argument, PO points to the scroll wheel of the Apple iPod to exemplify why "[t]he one-handed swipe-to-scroll ability provided by the '931 patent was a significant breakthrough for its time." POR, 43. Setting aside the fact that the Apple scroll wheel is divorced from the '931 Patent in time (2001 for the Apple scroll wheel v. 1997 for the '931 Patent), PO does not assert, in the first instance, that the ***scroll wheel*** of the Apple iPod actually practices the

purported invention, nor could it. Quite simply, any success of the Apple iPod's scroll wheel has no relevance whatsoever to the '931 claims. "Objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support." *In re Clemens,* 622 F.2d at 1036.

That the Apple iPod and the '931 patent claims may both allegedly allow for one-handed swiping is irrelevant, as they accomplish this task through very different technologies. Furthermore, that the one-handed operation of the Apple iPod was a "heavily-touted feature" does not make it a "breakthrough." PO's additional reference to "the ability to use a flicking gesture to scroll on the iPhone has itself been described as a game-changing feature" is similarly nonsensical as there is also no established nexus between that feature (arising even later than the scroll wheel in the iPod) and the '931 claims.

PO also asserts that "there was no radiotelephone device that existed prior to the '931 patent that received a moving contact to scroll through displayed rows of graphical objects." POR, 44; Ex. 2057, ¶ 106. However, even this assertion is incorrect, as the IBM Simon – released a full five years before the earliest priority date of the '931 patent – provided such capabilities. Ex. 1209, 100:13-22; Ex. 2013, 45.

Furthermore, a showing of unexpected results must be based on evidence, not argument or speculation. *In re Mayne,* 104 F.3d 1339, 1343-44, 41 U.S.P.Q.2d 1451, 1455-56 (Fed. Cir. 1997) (conclusory statements that claimed compound possesses unusually low immune response or unexpected biological activity that is unsupported by comparative data held insufficient to overcome *prima facie* case of obviousness). PO completely fails to explain why the ability to "swipe-to-scroll" using one hand was unexpected. Palatsi's disclosure made plain that scrolling in one hand through use of a push-button was known, and Moore plainly disclosed the use of touch strips for scrolling. Ex. 1087, 3:20-42, Figs. 2 and 4; Ex. 1012, 4:20-28. "***Expected beneficial results are evidence of obviousness of a claimed invention***, just as unexpected results are evidence of unobviousness thereof." *In re Gershon,* 372 F.2d 535, 538, 152 U.S.P.Q. 602, 604 (CCPA 1967). Moreover, as explained above, the ability to "swipe-to-scroll" using one hand is not even recited in the claims and, therefore, even if there were related unexpected results, they are not commensurate in scope with the claims which the evidence is offered to support. *In re Clemens,* 622 F.2d 1029, 1036, 206 U.S.P.Q. 289, 296 (CCPA 1980).

IV. LEVEL OF SKILL IN THE ART

PO asserts that "TCL's obviousness analysis fails to consider the challenges of implementing a touch-based user input display system for handheld radiotelephones as of December 31, 1997." POR, 23 (emphasis in original). This argument is as irrelevant as it is wrong.

First, PO's reliance on the state of the art of radiotelephones and handheld devices for its POSITA definition is not supported by the claim language. Second, the definition PO uses in its Reply differs from the definition used by its very own expert[13] and is, therefore, unsupported attorney argument. Third, PO never makes any assertion that Petitioners' or PO's analyses would be different depending on which definition was used, so the argument is irrelevant; but if considered, PO's proposal of a more skilled POSITA reinforces the obviousness and unpatentability of the claims.

A. The Claims do not Require the Art to be Related to Handheld Radiotelephones and Handheld Devices

PO's and PO's expert's definitions require a POSITA to have direct knowledge of the types of user interfaces used in mobile phones **and** handheld

[13] Notably, Patent Owner's expert definition is almost the same as Petitioners' definition.

devices in 1997. However, several claims are not related to such user interfaces or such devices.

For example, independent claim 16 and its dependent claims are not directed to a radiotelephone at all, but rather to an "apparatus." Nor do these claims have any features unique to mobile phones or handheld devices or any size requirement other than "the housing configured to be held in a user's hand such that the rear surface confronts the user's palm." Ex. 1001, claim 16. This situation is similar for claims 30, 33-34, 36-41, and 45-69. Clearly, a requirement that a POSITA have direct knowledge of user interfaces used in mobile phones **and** handheld devices is not supported by at least some of the claims.

Moreover, as stated by Mr. Ward, at the time of the invention the term "handheld" meant something larger and more tablet- or computer-like than is meant today. Rather, "handheld" was akin to portable where you could "hold it [the device] with one hand and use it [the device] with the other." Ex. 2004, ¶ 8 and Ex. 1209, 39:8-11.

B. Petitioners' Definition of a POSITA Meets Patent Owner's Expert Definition

Dr. Wolfe at least acknowledges and has considered the interplay of radiotelephones and touchscreens. For example, and as noted by Dr. Wolfe, one of ordinary skill in the art (as defined by the Petition) *would have* been aware of

integrations between radiotelephones and touchscreens just by being aware of the touchscreen art in general, as set forth in Petitioners' POSITA definition. Ex. 2003, 19:2-17. Dr. Wolfe further testified that a person with the education and experience of an ordinary electrical engineer would have had sufficient knowledge regarding radiotelephones communications transceivers to understand the art claimed in the '931 patent. Ex. 2003, 15:12-24. PO's own expert stated that anyone with a bachelor's degree in electrical engineering or computer engineering and at least 2-3 years of hands-on experience working with handheld contact-sensitive user interface devices would have had the experience and direct knowledge of the types of user interfaces used in mobile phones and handheld devices in 1997. Ex. 2057, ¶ 23. In other words, according to Mr. Ward anyone with the educational background described by Dr. Wolfe and with the level of experience described by Dr. Wolfe would have had the experience necessary to be a POSITA. Additionally, and based on Mr. Ward's testimony, experience with mobile phones would have been implied.

Separately from the POSITA question, the claims do not require any special integration between radiotelephone and touchscreen. Ex. 2003, 18:15-19:1. One of ordinary skill in the art would have been aware of ordinary problems affecting the integration of a touchscreen device into a radiotelephone device (Ex. 2003,

19:19-20:3), and that is all the experience that the claims require (Ex. 2003, 18:15-20:3).

C. Patent Owner and Patent Owner's Expert Disagree on the Definition of a Person of Ordinary Skill in the Art

Even PO's own expert does not advocate PO's definition of a POSITA.

Exhibit 2057 at paragraph 22 states that "I have concluded that a POSITA during the relevant timeframe would probably have had a bachelor's degree in electrical engineering or computer engineering, at least 2-3 years of hands-on experience working with hand held contact-sensitive user interface devices, and direct knowledge of the types of user interfaces used in mobile phones and handheld devices in 1997."

PO adds to this definition: "PO submits that a POSITA is someone with a bachelor's degree in computer engineering, electrical engineering, or computer science having multiple years of hands-on experience working with hand held contact-sensitive user interface devices or ***graphic user interfaces***. The POSITA had direct knowledge of the types of contact-sensitive user interfaces used in mobile phones or handheld devices as of December 30, 1997 ***and understands the design and functional tradeoffs with regard to the physical constraints of a hand-held device***." POR, 21 (emphasis indicating added portions). However, PO's expert stated that his definition gives the minimum requirements for a

POSITA, which puts his definition at odds with the definition given in PO's Response. Ex. 1209, 73:4-74:10.

PO's additional requirements of a POSITA come from nothing more than attorney argument, and are suggestive that the positions advocated by PO itself are from the wrong point of view even according to PO's own expert. As such, PO's definition should be ignored.

D. Any Difference in POSITA Would Further Support Unpatentability

Even if one of ordinary skill in the art would have had "multiple years of hands-on experience working with hand held contact-sensitive user interface devices or graphic user interfaces, […] direct knowledge of the types of contact-sensitive user interfaces used in mobile phones or handheld devices as of December 30, 1997 and [understood] the design and functional tradeoffs with regard to the physical constraints of a hand-held device," as asserted by PO (POR, 21), and, if then, Petitioners' analysis had not included such considerations and was, therefore, nominally from the wrong point of view, Petitioners' analysis would therefore have been from the point of view of someone who has *less skill*. Yet even this less skilled POSITA *would still have found the purported invention obvious* for the reasons set forth by Petitioners. Someone with more skill in accordance with PO's advocated POSITA would have found the invention even

easier to implement, in view of their increased knowledge of how to integrate functionality into touchscreens and mobile phones, and how to balance the tradeoffs.

If such a higher level of knowledge were to be considered, quite sensibly, the more likely a given variation from the prior art could be achieved by that POSITA. *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696 (Fed. Cir. 1983) (listing factors to be considered in determining level of ordinary skill); see also *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256-1257 (Fed. Cir. 2007). Additionally, a higher level of ordinary skill in the art would mean a broader scope and content of prior art. *See Innovention Toys, LLC v. MGA Entertainment, Inc.*, No. 2010-1290, 2011 WL 941563, at *8 (Fed. Cir. 2011). (indicating a more sophisticated level of skill generally favors a determination of obviousness). A higher level of skill in the art would also assist the factfinder in an obviousness analysis if the issue is whether the claimed invention was "obvious to try" or relates to "optimizing parameters." *See, e.g.*, *Ecolab, Inc. v. FMC Corp.*, 569 F.3d 1335, 1350 (Fed Cir. 2009).

Thus, by advocating a higher level of ordinary skill for the POSITA, PO only contributes to further establish the obviousness of the claimed invention in light of the evidence presented by Petitioners.

V. CONCLUSION

All of the individual features of the claims are known in the prior art and the prior art discloses these features in virtually identical relationships and functionalities as in the claims. Additionally, there are myriad reasons to combine the disclosures in the prior art references.

PO's rebuttal arguments are based on a clear misreading of Moore and the case law as well as on an alleged lack of a motivation to combine the prior art references. For all the reasons discussed above, PO's rebuttal is deficient in each and every respect.

In sum, the instituted claims are obvious based on a preponderance of the evidence and should be cancelled.

Date: September 20, 2016 Respectfully submitted,

/Jeffrey G. Killian/
Jeffrey G. Killian, Reg. No. 50,891
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Avenue, NW
Washington, DC 20004
Tel: 202-739-5592
Fax: 202-739-3001

Attorney for Petitioners

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Petitioners' Reply to Patent Owner's Response and Exhibits 1209-1216 were served on September 20, 2016 on the counsel of record for the Patent Owner by filing this document through the Patent Review Processing System as well as delivering a copy via electronic mail to the following addresses:

Todd Baker
Sameer Gokhale
Andrew Harry
Lisa Mandrusiak
Alex Kuo
Oblon, McClelland, Maier & Neustadt, LLP
1940 Duke Street
Alexandria, VA 22314

CPDocketBaker@oblon.com
CPDocketGokhale@oblon.com
CPDocketHarry@oblon.com
CPDocketMandrusiak@oblon.com
CPDocketKuo@oblon.com

September 20, 2016

Respectfully submitted,

By /Jeffrey G. Killian/
Jeffrey G. Killian
Registration No.: 50,891

CERTIFICATE OF COMPLIANCE

The undersigned certifies that this document complies with the type-volume limitations of 37 C.F.R. § 42.24 and Consolidation Order, Paper No. 17. This Reply contains 10,950 words, excluding the parts of the brief excepted by 37 C.F.R. § 42.24(c), as calculated by the Microsoft Word program used to prepare the document.

September 20, 2016

Respectfully submitted,

By /Jeffrey G. Killian/
Jeffrey G. Killian
Registration No.: 50,891