THE HONORABLE JAMES L. ROBART

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

MALIKIE INNOVATIONS LTD., KEY PATENT INNOVATIONS LTD., Plaintiffs, v. NINTENDO CO., LTD., NINTENDO OF AMERICA INC., Defendants.	NO. 2:24-cv-01490-JLR **LPR 132 JOINT CLAIM CONSTRUCTION AND PREHEARING STATEMENT (AMENDED)** Markman Hearing: Scheduled for November 18, 2025, 9 a.m.

Pursuant to Local Patent Rule 132 and Dkt. 31, Plaintiffs Malikie Innovations Limited and Key Patent Innovations Limited (collectively, "Plaintiffs") and Defendants Nintendo of America Inc. and Nintendo Co., Ltd. (collectively, "Defendants") hereby submit this Amended Joint Claim Construction Statement and Prehearing Statement. The parties have reached agreement to narrow certain terms at issue for claim construction. There is also a minor typographical error corrected on page 29A (reflected in 30B). A redline comparison of Attachment A against that included in Dkt. 44 is included as Attachment B.

The asserted claims are:

U.S. Patent No. 9,542,571: claims 1-20

U.S. Patent No. 8,610,397: claims 1-22

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U.S. Patent No. 8,545,247: claims 1, 2, 6, 11, 13, 15, 16, 19

U.S. Patent No. 8,115,731: claims 1-3, 11, 13-14

U.S. Patent No. 9,313,065: claims 1-2, 4-10, 12-18, 20-26, 28-32, 34, 37-38, 40-42

U.S. Patent No. 7,529,305: claims 1-3, 6

I. The construction of those claim terms, phrases, or clauses on which the parties agree

Term	Agreed Construction
M substreams *U.S. Patent No. 7,529,305, claim 6*	M symbol substreams
the space-time coding function *U.S. Patent No. 7,529,305, claim 6*	the space-time coding block
[an/the] OFDM symbol *U.S. Patent No. 9,313,065, claims 1, 9, 17, 25, 31, and 37*	[a/the] one of the plurality of OFDM symbols
the pilot symbols / the received pilot symbols *U.S. Patent No. 9,313,065, claims 2, 4, 10, 12, 18, 20, 26, 28, 32, 34, 38 and 40*	the pilot symbols [(corresponding to) | (for)] the first antenna and the pilot symbols [(corresponding to) | (for)] the second antenna
the housing *U.S. Patent No. 8,545,247, claim 19*	a housing
the/a connector *U.S. Patent No. 8,545,247, claim 13*	The first instance of "the connector" should be construed as "a connector" and vice versa.

The parties also agree that the preambles of each of the following patents are limiting: U.S. Patent No. 9,313,065 (claims 1, 9, 17, 25, 31, 37), 7,529,305 (claim 1), 9,542,571 (claim 1), 8,610,397 (claims 1, 18). These agreements are without waiver of any of Plaintiffs' claims or Defendants' defenses.

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II. Each party's proposed construction of each disputed claim term, phrase, or clause

Attachment A.

III. The ten most important disputed claim terms

The parties submit the following ten claim terms for construction.

8,115,731

i. "a direction substantially parallel or substantially perpendicular to the orientation" (claim 1)

8,545,247

ii. "inner wall" (claims 1, 12, 13, 15)

iii. "support" (claims 1, 2, 12, 13, 15, 16)

9,313,065

iv. "wherein the pilot symbols for the first antenna correspond to a first code and the pilot symbols for the second antenna correspond to a second code" (claims 1, 9, 17, 25, 31, 37)

7,529,305

v. "mth" (claim 6)

vi. "m-1" (claim 6)

vii. "a delay arrangement, arranged such that for each symbol of the M symbol substreams a time of representation of the symbol in the M space-time coded streams is different for each of the M space-time coded streams" (claim 1);

viii. "delay elements adapted to insert a delay in at least one of the M substreams" (claim 6)

9,542,571

ix. "list of applications permitted for installation" (claim 1, 10, 17)

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8,610,397

x. "charging rate" (claims 1, 11, 18)

IV. The anticipated length of time necessary for the Claim Construction Hearing

The parties anticipate that the hearing should take at least half a day, given the number of patents-in-suit and disputed terms. There are six patents-in-suit, none with any familial relationship. As a result, time may be spent providing context and background for each of the six patents in order to better explain the claim construction dispute.

V. The proposed order of presentation at the Claim Construction Hearing

The parties propose that the Court hear claim construction arguments on a patent-by-patent, term-by-term basis. The parties disagree on the order of the argument.

Plaintiffs' Position

Plaintiffs propose proceeding term-by-term. The party proposing a term should proceed first. The other party would then respond, and the proposing party may rebut.

Defendants' Position

Defendants propose going term-by-term, with Defendants first, then Plaintiffs, then Defendants' rebuttal, since for many of the terms, Defendants are proposing indefiniteness and/or a specific construction based on intrinsic and/or extrinsic evidence.

VI. The parties' position on whether, why, and the extent to which the Court should consider live testimony at the Claim Construction Hearing

The parties currently believe that live testimony will not be needed.

VII. The parties' position as to whether there should be a tutorial on the subject matter of the patent(s) at issue

The parties agree that a tutorial would benefit the Court, at least as to the '065 Patent and '305 Patent. The '065 Patent is titled "Scattered Pilot Pattern and Channel Estimation Method for MIMO-OFDM Systems." The '305 Patent is titled "Combination of Space-Time Coding and Spatial Multiplexing, and the Use of Orthogonal Transformation in

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Space-Time Coding."

Plaintiffs' Position

Plaintiffs suggest that any tutorials be provided to the Court in advance of the *Markman* hearing (at a time to be decided by the Court) and that the parties be permitted to use them during the hearing.

Defendants' Position

Defendants suggest the tutorial be presented live, on the same day as the Claim Construction Hearing, so that the Court may ask questions.

VIII. Whether a pre-hearing conference, prior to the Claim Construction Hearing, is necessary

Because the parties disagree on the "ten most important disputed claim terms," a pre-hearing conference may be beneficial.

IX. Whether the parties believe the Court should appoint an independent expert

The parties do not believe an independent expert is necessary.

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Attachment A

Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
U.S. Pat. No. 9,542,571		
list of applications permitted for installation *claims 1, 10, 17*	Proposed Construction *No construction required.* Intrinsic Evidence 6:55–64 ("… so long as owner control information store is capable of storing a required application list, and in some instances an allowed application list and/or an excluded application list, the particular control information insertion system and method can vary significantly …."); 5:25–43; 15:56–64; 20:11–28; 21:21–26; 21:36–48; fig. 2	Proposed Construction **list of applications permitted by the owner for installation** Intrinsic Evidence '571 patent, Figs. 2, 3-6, 9; 1:41-43 ("This system relates generally to electronic devices, and in particular to controlling application installation of such devices by a device owner."), 4:34-5:5 ("…The application lists provide owner control of application installation and deletion on the electronic device...."), 5:25-43 ("The owner information source 224 and the owner control information source 234 could be local memory devices, communication modules through which remote memory devices storing owner information and owner control information are accessible, or possibly user interfaces through which owner information and owner control information are entered."), 6:32-54 ("…In a large company, for example, corporate computer system administrators may be authorized to perform owner information insertion

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		operations from administrator computer systems, or from any corporate computer system from which administrative functions can be accessed, thereby providing multiple owner information insertion points **220**. Similarly, when an owner allows users to insert digitally signed owner control information onto electronic devices, as described above, each user's computer system may be used as an owner control information insertion point **230**...."), 6:55-64 ("…so long as owner control information store is capable of storing a required application list, and in some instances an allowed application list and/or an excluded application list, the particular control information insertion system and method can vary significantly, and use any conventional insertion/interfacing technology, without impacting the owner application control systems and methods discussed herein."), 7:39-53 ("Owner control information, in which an owner of the mobile device 30 specifies usage permissions and restrictions for the mobile device 30…"), 10:3-8 ("In an authorization record, an owner of the mobile device 30 specifies a list of

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		software applications that a user is authorized to install on the mobile device 30…"), 14:19-23 ("An authorization record specifies particular software applications that are authorized for installation on the mobile device 30…"), 14:63-15:16 ("…If no owner control information is present on the mobile device 30, then no owner controls have been established for the mobile device 30, and the software application is installed…."), 15:52-16:56 ("…if an owner generates a hash of each authorized software application and includes the hash in the owner control information that is inserted onto the mobile device 30…"), 17:17-23 ("…identification information associated with installed applications can be transmitted to a remote server managed by the owner that performs the comparison…"), 17:36-40 ("The list or list update can be received in response to a request by the device (e.g., request a list or update at initialization) or without such a request (e.g., responsive to an authorization modification by the owner on a remote owner administration server)."), 17:48-67 ("…Such a write or

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		erase command is not executed unless a digital signature is verified using the owner's digital signature public key stored on the mobile device 30…."), 18:1-61 ("Owner control information may also include an excluded software application list that uniquely identifies software applications that the owner of an electronic device establishes cannot be installed on the device. An excluded software application list allows an owner to ensure that every owned electronic device does not contain particular malicious and/or counter productive software applications."), 19:35-39 ("At step 92, owner control information is established, based on how an owner wishes to control an electronic device. Owner control information, as described above, may include an authorized software application list and a required software application list, for example."), 20:3-28 ("The owner control information, such as the software application lists and the application operation restrictions described above, can be maintained on a remote server managed by the device owner. … In some implementations, a graphical user

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		interface can be provided through which the owner can specify the particular control information associated with a device or device group."), 20:58-21:48 ("…The owner control information on the remote server can be managed in a variety of ways including through provision of a management user interface such as the one depicted in FIG. 9…."), 22:13-24 ("Alternatively, a default action in response to a negative determination at step 114 could be to revert to step 122, when an owner does not wish to restrict device operations before owner control information is inserted…."), 22:43-67 ("…As an example, a system of owner application control of an electronic device can comprise an owner control information store configured to store owner control information for controlling operation of the electronic device, and more specifically installation and/or deletion of applications on the electronic device and/or restrictions on operations by applications once installed…."), 23:5-16 ("Such a method can includes verifying that an application in a required list in an owner control information store is

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		available for execution on the device, and if the application in the required list is not verified as available, initiating download and installation of such application from an external application source such as a computer system or memory device…."); 29:40-44 ("…the owner control information includes an authorization record and an application identifier for each of the applications…") '571 file history, Oct. 8, 2015 Amendment, pp. 9-10 ("…Independent claim has been amended to recite 'wherein the authorization record and the application identifier are included in owner control information stored on the electronic device for each application allowed to be executed on the electronic device, and wherein insertion of additional owner control information onto the electronic device is restricted,' as recited in previously presented, herein canceled, claim 4…."), Claims 1, 12, & 20; Nov. 10, 2015 Final Rejection, pp. 4-8 ("…Fisher shows the principle whereby multiple users on a computer system and the applications associated with that user are granted access to

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		certain local memory and barred access to other local memory…."); Jan. 11, 2016 Amendment, pp. 10-12 ("…Claim 1, as amended, recites: … receiving, by the electronic device, owner control information that identifies permissions associated with applications executable by the electronic device…"), Claims 1, 12, & 20; Apr. 27, 2016 Final Rejection, pp. 3-8 ("…Fisher shows the principle whereby multiple users on a computer system and the applications associated with that user are granted access to certain local memory and barred access to other local memory…."); July 27, 2016 Amendment, pp. 9-13 ("Claim 1, as amended, recites: … receiving, by the electronic device, owner control information that comprises: a list of applications permitted for installation on the electronic device, and"), Claims 1, 12, & 20; Aug. 17, 2016 Notice of Allowance, p. 2 ("The claims as now amended recite 'a list of applications permitted for installation' along with intended permissions for each. This is markedly different from an access control list, because the access control

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		list is a list of permissions for current applications and other files. The access control list would not include files that are not currently on the computer, such as applications not currently installed.")
U.S. Pat. No. 8,610,397		
charging rate *claims 1, 11, 18*	Proposed Construction *No construction required.* Intrinsic Evidence 2:60–3:2 ("By way of example, a particular rechargeable battery may have a higher Voltage and/or current limit associated there with than the portable device it is carried by. In such case, charging the battery at its highest rated Voltage/current level could cause damage to the portable device. Accordingly, the controller may select the actual charging parameter(s) based upon a limiting one of the different portable device and battery charging parameters. Thus, the controller may prevent the battery from being charged using a charging parameter that could damage either the portable device or the battery."); tables 1, 2.	Proposed Construction **the current expressed in amperes at which a battery is charged** Dictionary Evidence The Authoritative Dictionary of IEEE Standard Terms (7th Ed.) (2000), p.163 (definition of "charging rate": "**The current expressed in amperes at which a battery is charged**.") (emphasis added). The New IEEE Standard Dictionary of Electrical and Electronics Terms (5th Ed.) (1993), p.180 (definition of "charging rate": "**The current expressed in amperes at which a battery is charged**.") (emphasis added). Intrinsic Evidence File history of U.S. Patent No. 7,271,568, January 19, 2007 Applicant Remarks ("Moreover, the Examiner further

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		contends that Mori et al. teaches at least one actual charging parameter… As noted above, independent Claims 1, 15, and 25 have been amended to recite that different battery types have respective charging rates, and that the charging circuit charges rechargeable batteries at respective charging rates thereof. Nowhere does Mori et al…. teach or fairly suggest charging different battery types based upon respective charging rates thereof as recited in these claims. Rather, Mori et al. tracks battery voltage, battery temperature, remaining capacity, and charging/discharging cycle information."). *See also* Zane Decl. at ¶¶ 34-36 Extrinsic Evidence Dr. Regan Zane Decl. at ¶¶ 21-42, including ¶ 31 ("the term 'charging rate' does not appear in the specification of the '397 patent") and ¶ 32 ("a POSITA would have understood the term 'charging rate' in the '397 patent claims to mean 'the current expressed in amperes at which a battery is charged'")
U.S. Pat. No. 8,545,247		
support	Proposed Construction *No construction required.*	Proposed Construction **a structure that limits movement in a**

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
claims 1, 2, 12, 13, 15, 16	Intrinsic Evidence Fig. 4; 5:62–65 ("The connector support assembly 308 may be any support that is coupled to the housing 200 and includes a portion that elastically deforms in response to movement of the connector 400"); 2:15–18 Extrinsic Evidence Garner Report ¶¶ 8–10	**direction** Intrinsic Evidence '247 patent, Figs. 3, 4, 8, 9, 10; 2:21-23 ("a support coupled to an inner wall of the housing, a portion of the support being elastically deformable;"), 2:38-39 ("wherein the portion of the support elastically deforms in response to non-axial movement of at least a portion of the connector."), 3:67-4:13 ("In one example, the housing 200 includes a seat 302 and a support wall 300 for receiving the portable electronic device 100. In general, the support wall 300 and the seat 302 support the weight of a received portable electronic device 100, although in some of the embodiments depicted herein, the seat 302 may support more weight than the support wall 300. As shown in FIG. 3, an edge surface 304 of the portable electronic device 100 contacts the seat 302 of the housing 200 and a rear surface 306 of the portable electronic device 100 contacts the support wall 300 of the housing 200. The size and shape of the seat 302 and the support wall 300 and the angle between the seat 302 and the support wall 300

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		may be selected to accommodate different sizes and types of portable electronic devices 100."), 4:18-19 ("The dock 150 includes a connector support assembly 308 that is coupled to an inner surface of the housing 200."), 4:51-57 ("The connector support assembly 308 includes a support 404, a spring component 406, which is received in the support 404, and a flexible pad 412, which is located on a base 408 of the support 404. The base 408 of the support 404 limits movement of the connector 400 in a z-direction to facilitate coupling with a mating connector of the portable electronic device 100."), 5:62-65 ("The connector support assembly 308 may be any support that is coupled to the housing 200 and includes a portion that elastically deforms in response to movement of the connector 400."), 6:42-46 ("Referring still to FIGS. 8, 9 and 10, the connector support assembly 812 includes a support tray 1000, a spring component 1002, which is located in the support tray 1000, and a pad 1004, which is disposed between a base 1008 of the support tray 1000 and the spring component 1002."), 7:49-52 ("The base

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		1008 of the support tray 1000 limits movement of the connectors 806, 808 in the z-direction to facilitate coupling with mating connectors of the portable electronic device 100.")
inner wall *claims 1, 12, 13, 15*	Proposed Construction *No construction required.* Intrinsic Evidence Claims 1, 12–15; 4:14–32 Extrinsic Evidence Garner Report ¶¶ 11–15	Proposed Construction **internal upright or vertical structure enclosing a space** Intrinsic Evidence '247, Figs. 3, 4, 5, 8, 10, 12; 2:21-22 ("a support coupled to an inner wall of the housing"), 3:67-4:13 ("In one example, the housing 200 includes a seat 302 and a support wall 300 for receiving the portable electronic device 100. In general, the support wall 300 and the seat 302 support the weight of a received portable electronic device 100, although in some of the embodiments depicted herein, the seat 302 may support more weight than the support wall 300. As shown in FIG. 3, an edge surface 304 of the portable electronic device 100 contacts the seat 302 of the housing 200 and a rear surface 306 of the portable electronic device 100 contacts the support wall 300 of the housing 200. The

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		size and shape of the seat 302 and the support wall 300 and the angle between the seat 302 and the support wall 300 may be selected to accommodate different sizes and types of portable electronic devices 100."), 4:18-19 ("The dock 150 includes a connector support assembly 308 that is coupled to an inner surface of the housing 200."), 4:51-57 ("The connector support assembly 308 includes a support 404, a spring component 406, which is received in the support 404, and a flexible pad 412, which is located on a base 408 of the support 404. The base 408 of the support 404 limits movement of the connector 400 in a z-direction to facilitate coupling with a mating connector of the portable electronic device 100.), 4:64-66 ("A collar 418 is located at the top end 414 of the spring component 406 and ribs 410 extend from an inner wall 502 of the passage 500.), 6:34-36 ("The connectors 806, 808, 810 are mounted in a connector support assembly 812, which is coupled to an inner surface of the housing 200.), 6:46-49 ("The spring component 1002 includes tabs 820, which mate with openings 822 in a front wall 824 of the

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		support tray 1000 to generally fix the spring component 1002 relative to the support tray 1000.), 7:3-6 ("Collars 1018 are located at the top end 1202 of the spring component 1002 to surround the passages 1100, 1102 and ribs 1012 extend from inner walls 1014 of the passages 1100, 1102.), 7:10-12 ("Ribs 1012 extend from inner walls 1014 and 1016 of passages 1100 and 1102 of the spring component 1002, respectively.), 8:6-9 ("Referring also to FIG. 14, the support tray 1000 includes openings 1400, which extend through a rear wall 1402 of the support tray 1000 to allow wiring 1404 of the connectors 806, 808, 810 to extend therethrough.") Dictionary Evidence Webster's New World College Dictionary (4th Ed.) (2005), p. 735 (definition of "inner": "located farther within; interior; **internal**.") (emphasis added) Webster's New World College Dictionary (4th Ed.) (2005), p.1609 (definition of "wall": "an **upright structure** of wood, stone, brick,

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		etc., serving to **enclose**, divide, support, or protect.") (emphasis added).
U.S. Pat. No. 8,115,731		
a direction substantially parallel or substantially perpendicular to the orientation. *claim 1*	Proposed Construction *No construction required.* Intrinsic Evidence Claims 1, 12–15; 4:14–32 Extrinsic Evidence Garner Report ¶¶ 25–28	Proposed Construction **Indefinite as to full scope** Extrinsic Evidence Dr. Nathaniel Polish Decl. at ¶¶ 14-47, including ¶ 19 ("it is my opinion that a POSITA would not have had any basis for evaluating what constitutes 'a direction substantially parallel or substantially perpendicular to the orientation' as to its full scope"), and ¶ 21 ("claim language is indefinite on multiple levels—both as to (1) the 'substantially parallel or substantially perpendicular' language and (2) the 'orientation' language"). Intrinsic Evidence '731, Figs. 1-6; 1:49-2:20 ("Directional input devices can be classified as having either one, or a plurality of degrees of freedom…."), 2:54-3:39 ("In classifying directional input devices it should be noted that directional input devices can

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		have both presence and degree…."), 3:44-48 ("Added user operational complexity may be required for simulated uni-dimensional input on devices using traditional multidegree of freedom directional input devices. The same can be said for simulated multidimensional input using traditional single degree of freedom directional input devices."), 3:54-61 ("There is therefore a need for a directional input device with a minimized size, to allow for a larger screen, while reducing the tooling costs associated with apertures on the moulding of the handheld device. There is a further need for a directional device that is capable providing directional input to a handheld without requiring dual handed operation, and without providing a preference to right handed people, left handed people, or people with a particular size of hand."), 4:1-29 ("…In response to inclination of the handheld device in the direction of the directional contact, the circuit closing means moves between a neutral position in which the primary contact and the directional contact form an open circuit, and an active position in which the

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		primary contact and the directional contact form a closed circuit. A direction interpreter, operatively connected to the primary and directional contacts, generates the directional input to the element of the user interface when the closed circuit is formed…."), 5:5-13 ("In another aspect, there is provided a method of controlling an element of a user interface of a handheld device based on the inclination of the handheld device. The method comprises sensing the inclination of the handheld device; generating a directional input signal representative of the inclination of the handheld device; transmitting the generated directional input signal to the user interface of the handheld device; and processing the transmitted directional input signal to control the element of the user interface."), 5:44-6:21 ("…When the handheld device is sufficiently inclined, circuit closing means 25 moves to an active position, in which the open circuit is closed…."), 7:26-67 ("…As illustrated, base 22 is substantially horizontal with respect to line HH….Although not expressly shown in the Figs., many alternative

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		sensors are compatible with the method, such as a solid state compass or gyroscope which senses orientation with respect to magnetic north, or a pendulum such as a tine pendulum, a micro saucer, or a solid state memory device. The choice of an actual orientation sensor is a matter which depends on the application of the present invention to a particular handheld device and the choice of sensor is obvious to those knowledgeable in the field in light of a particular handheld and the present invention."), 8:7-39 ("…Returning to FIG. 6, in the second step 40, the orientation is converted to a direction signal compatible with traditional directional input means, such as a roller, touch pad, or arrow keys, thereby allowing a next generation handheld using the method to reclaim the space used by traditional directional controls such as a thumbwheel…."), 8:53-9:11 ("…At step 40, the sensed orientation and amount of touch pad displacement are converted into a direction signal constrained in a direction substantially perpendicular to the inclination axis….At step 40, the sensed orientation and amount of touch pad

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Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
		displacement are converted into a direction signal constrained in a direction substantially parallel to the inclination axis."), 9:43-10:33 ("…a direction interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.") '731 File History, Oct. 3, 2005 Application, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in· a direction substantially corresponding to an axis of inclination in the axial selecting mode…."); Jan. 2, 2009 Amendment, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode…."); May 28, 2009 Amendment, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to an axis of

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		inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode…."); June 25, 2009 Amendment, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode…."); Oct. 21, 2009 Amendment, pp. 6-8 ("…Claim 1 has been further amended to recite that the graphical element is responsive to the axis of inclination and the second directional input signal…."), Claim 1; Feb. 17, 2010 Amendment, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to the axis of inclination in the axial constraining mode responsive to the second directional input signal, and moves in a direction substantially corresponding to the axis of inclination in the axial selecting mode responsive to the second directional input signal…."); Apr. 9, 2010 Amendment, p. 6 ("…In particular,

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		claim 1 now specifies that the directional input signal indicates an orientation, and the second directional input signal indicates a degree of displacement. Claim 1 was further amended to recite that the graphical element moves relative to the degree of displacement in a direction either parallel or perpendicular to the orientation provided by the directional input signal.…"), Claim 1
U.S. Pat. No. 9,313,065		
wherein the pilot symbols for the first antenna correspond to a first code and the pilot symbols for the second antenna correspond to a second code *claims 1, 9, 17, 25, 31, 37*	Proposed Construction *No construction required.* Intrinsic Evidence Claims 1, 9, 17, 25, 31, 37; 8:1–8 ("The STBC block 23 takes two pilot symbols at a time for example P_1 and P_2 … and generates an STBC block consisting of a two by two matrix having (P_1, P_2) in the first row and having ($-P_2^*$, P_1^*) in the second row.") Extrinsic Evidence Shoemake Report ¶¶ 32–36	Proposed Construction **wherein the pilot symbols for the first antenna correspond to a first row/column of a space time block code and the pilot symbols for the second antenna correspond to a second row/column of the space time block code** Intrinsic Evidence '065 patent, 5:4-11 ("In some embodiments, the method further comprises for each location within a scattered pattern in time-frequency: generating a group of L uncoded pilot symbols; performing space time block coding (STBC) on the group of L

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		uncoded pilot symbols to produce an N×N STBC block, L and N determining an STBC code rate; transmitting one row or column of the STBC block on each antenna on a specific sub-carrier."); 5:65-6:3 ("In some embodiments, the transmitter is further operable to, for each location in the scattered pattern: generate a group of L uncoded pilot symbols; perform space time block coding (STBC) on the group of L pilot symbols to produce an N×N STBC block; transmit one row or column of the STBC block on each antenna."); 8:1-17 ("The pilot inserter 24 is connected to receive space-time coded pilot symbols from pilot STBC function 23 which performs STBC on pilot symbols 21. The pilot STBC block 23 takes two pilot symbols at a time for example P1 and P2 as indicated in FIG. 2 and generates an STBC block consisting of a two by two matrix having (P1, P2) in the first row and having (−P2*, P1*) in the second row. It is the first row of this STBC block that is inserted by the pilot inserter 24. The data symbols sent along the second processing path 18 are sent to a second OFDM component 38 which includes

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		processors similar to those included in the first OFDM component 20. However, the pilot inserter 40 inserts encoded pilot symbols from the second row of the STBC block produced by the pilot STBC function 23. The symbols sent along the second processing path 18 are ultimately transmitted as a signal through a second transmitting antenna 42."); 9:19-36 ("Referring now to FIG. 4, a method by which each of the pilot inserters 24 and 40 of FIG. 2 inserts pilot symbols among the data symbols is shown. The method will be described with reference to the pilot inserter 24 in the first OFDM component 20. At step 100, the pilot inserter 24 receives data symbols from the demultiplexer 22. At step 102 the pilot STBC function 23 generates (or receives) two pilot symbols. At step 104 the pilot STBC function 23 applies STBC encoding to the pilot symbols, so as to generate an STBC block of encoded pilot symbols. The encoded pilot symbols generated for the first transmitting antenna 37 will be one row of the STBC block and will have a number equal to the number of transmitting antennae in the OFDM

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		transmitter. Thus, for a two antenna system a 2×2 STBC block is generated. At step 106 the pilot inserter 24 inserts the encoded pilot symbols within the OFDM symbol. Encoded pilot symbols are inserted in a diamond lattice pattern."); 10:62-11:15 ("Let P_1 and P_2 be the two pilot symbols encoded in an STBC block and transmitted by two antennas on one sub-carrier in consecutive OFDM symbols. Then at the first receive antenna, the following relationship exists for each sub-carrier on which pilot symbols are transmitted, where it is assumed the channel response H_{ij} is constant over two OFDM frames: [equation omitted] $Y_{1,1}$ is the received data on the first antenna on the sub-carrier in the first of the two consecutive OFDM symbols, and $Y_{1,2}$ is the received data on the first antenna on the sub-carrier in the second of the two consecutive symbols. This can be solved for H_{11}, H_{21} to yield: [equation omitted].")) File History for U.S 10/038883 at January 30, 2006 OAR, Inventor Affidavit (Nortel Networks Invention

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		Disclosure, page 2 ("In this invention, space-time-block-coding (STBC) is applied to the scattered pilots in the frequency domain without additional overhead.").) Extrinsic Evidence File History for U.S 10/038883 at January 30, 2006 OAR, Inventor Affidavit (Nortel Networks Invention Disclosure, page 2 ("In this invention, space-time-block-coding (STBC) is applied to the scattered pilots in the frequency domain without additional overhead.").)
U.S. Pat. No. 7,529,305		
mth *claim 6*	Proposed Construction (m=1, …,M)th Intrinsic Evidence 3:14–16 ("For example, the delay elements can be adapted to introduce a delay of m-1 symbol periods in the mth orthogonal output, where m=1,..., M.") Extrinsic Evidence Shoemake Report ¶¶ 48–51	Proposed Construction *No construction required.*
m-1	Proposed Construction	Proposed Construction

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claim 6	((m=1, …,M) – 1) Intrinsic Evidence 3:14–16 ("For example, the delay elements can be adapted to introduce a delay of m-1 symbol periods in the mth orthogonal output, where m=1,..., M.") Extrinsic Evidence Shoemake Report ¶¶ 48–51	*No construction required.*
a delay arrangement, arranged such that for each symbol of the M symbol substreams a time of representation of the symbol in the M space-time coded streams is different for each of the M space-time coded streams *claim 1*	Proposed Construction *No construction required.* Intrinsic Evidence Claim 1; fig. 5; 4:52–5:35 Extrinsic Evidence Shoemake Report ¶¶ 38–42	Proposed Construction **a time delay arrangement, arranged such that for each symbol of the M symbol substreams a time of representation of the symbol in the M space-time coded streams is different for each of the M space-time coded streams** Intrinsic Evidence '305 patent, 3:7-31 ("In some embodiments, the space-time coding function has an orthogonal transform adapted to produce M orthogonal outputs each of which is a function of the M substreams, and has delay elements adapted to insert delays in the M orthogonal outputs to produced M delayed orthogonal outputs such that

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		each of the M delayed orthogonal outputs is a function of a given element of each of the M substreams at a different time. For example, the delay elements can be adapted to introduce a delay of m−1 symbol periods in the mth orthogonal output, where m=1, . . . , M."); 4:8-11 ("There is an orthogonal transformation block 30 and a number of delay blocks 32 (only two shown, 32*m*−1, 32M−1) the outputs of which are connected to respective transmit antennas 34A, . . . , 34M."); 4:43-67 ("Now, to achieve the separation in time, the mth orthogonal transformation output xm is delayed by a time period equal to (m−1)T, where T is the symbol duration, such that the first output x_1 experiences no delay, and the Mth output x_M experiences a delay of (M−1)T. The output of the delay blocks 32 consists of the symbols z_1, . . . , z_M to be transmitted on the antennas 34. The effect of the orthogonal transformation 30 plus the delay blocks 32 is that the mth input symbol s_m is represented in all m output streams, but at different times. Referring now to FIG. 5, another embodiment of the invention is provided in which the encoded and modulated

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		symbols s_m are fed through respective delay banks 40 (40A, . . . , 40M) each containing M−1 delay elements. Each symbol with equal delay is fed to a common scaling block 42. Thus, all undelayed symbols s_1, . . . , s_M are fed to a first scaling block 42 *a*, the symbols s_1, . . . , s_M delayed by (m−1)T are fed to an mth scaling block 42*m* and so on. Each scaling block 42*m* multiplies each of its inputs by a respective complex multiplier, and the results are summed in a respective summer 44*m* the output of which is the mth transmitted symbol z_m. This is really mathematically equivalent to the embodiment of FIG. 4 in that each output symbol z_m is again a function of all of the input symbols at a given instant, but at different times. Effectively, the delay block and the orthogonal transformation functions have been done in reverse order."); 5:4-13 ("Referring now to FIG. 6, another embodiment of the invention is provided in which bit-level space-time encoding is performed. In this embodiment, a 1:M demultiplexer 59 produces from an input bit stream 58M bit substreams u_1, . . . , u_M which are all fed into delay elements 60A, . . . ,

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		60M−1 each adding a further bit period T delay."); 5:21-26 ("In this case, it is assumed that the demultiplexer 59 is a 1:4 demultiplexer which produces four bit substreams u_1, u_2, u_3, u_4 which are all fed undelayed to a first 16 QAM mapping 62A, and are all fed to a delay element 60 which introduces a delay T into the substreams and outputs the delayed substreams into a second 16 QAM mapping 62B.").
delay elements adapted to insert a delay in at least one of the M substreams *claim 6*	Proposed Construction *No construction required.* Intrinsic Evidence Claim 6 Extrinsic Evidence Shoemake Report ¶¶ 43–47	Proposed Construction **delay elements adapted to insert a time delay in at least one of the M symbol substreams** Intrinsic Evidence '305 patent, 3:7-31 ("In some embodiments, the space-time coding function has an orthogonal transform adapted to produce M orthogonal outputs each of which is a function of the M substreams, and has delay elements adapted to insert delays in the M orthogonal outputs to produced M delayed orthogonal outputs such that each of the M delayed orthogonal outputs is a function of a given element of each

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		of the M substreams at a different time. For example, the delay elements can be adapted to introduce a delay of m−1 symbol periods in the mth orthogonal output, where m=1, . . . , M."); 4:8-11 ("There is an orthogonal transformation block 30 and a number of delay blocks 32 (only two shown, 32*m*−1, 32M−1) the outputs of which are connected to respective transmit antennas 34A, . . . , 34M."); 4:43-67 ("Now, to achieve the separation in time, the mth orthogonal transformation output xm is delayed by a time period equal to (m−1)T, where T is the symbol duration, such that the first output x_1 experiences no delay, and the Mth output x_M experiences a delay of (M−1)T. The output of the delay blocks 32 consists of the symbols z_1, . . . , z_M to be transmitted on the antennas 34. The effect of the orthogonal transformation 30 plus the delay blocks 32 is that the mth input symbol s_m is represented in all m output streams, but at different times. Referring now to FIG. 5, another embodiment of the invention is provided in which the encoded and modulated symbols s_m are fed through respective delay banks 40 (40A, . . . , 40M) each

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		containing M−1 delay elements. Each symbol with equal delay is fed to a common scaling block 42. Thus, all undelayed symbols $s_1, \ldots, s_M$ are fed to a first scaling block 42 *a*, the symbols $s_1, \ldots, s_M$ delayed by (m−1)T are fed to an mth scaling block 42*m* and so on. Each scaling block 42*m* multiplies each of its inputs by a respective complex multiplier, and the results are summed in a respective summer 44*m* the output of which is the mth transmitted symbol z_m. This is really mathematically equivalent to the embodiment of FIG. 4 in that each output symbol z_m is again a function of all of the input symbols at a given instant, but at different times. Effectively, the delay block and the orthogonal transformation functions have been done in reverse order."); 5:4-13 ("Referring now to FIG. 6, another embodiment of the invention is provided in which bit-level space-time encoding is performed. In this embodiment, a 1:M demultiplexer 59 produces from an input bit stream 58M bit substreams $u_1, \ldots, u_M$ which are all fed into delay elements 60A, . . . , 60M−1 each adding a further bit period T delay."); 5:21-26 ("In this case, it is

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		assumed that the demultiplexer 59 is a 1:4 demultiplexer which produces four bit substreams u_1, u_2, u_3, u_4 which are all fed undelayed to a first 16 QAM mapping 62A, and are all fed to a delay element 60 which introduces a delay T into the substreams and outputs the delayed substreams into a second 16 QAM mapping 62B.").

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Attachment B

Claim Language	Plaintiffs' Proposed Construction and Evidence in Support	Defendants' Proposed Construction and Evidence in Support
U.S. Pat. No. 9,542,571		
list of applications permitted for installation *claims 1, 10, 17*	Proposed Construction *No construction required.* Intrinsic Evidence 6:55–64 ("… so long as owner control information store is capable of storing a required application list, and in some instances an allowed application list and/or an excluded application list, the particular control information insertion system and method can vary significantly …."); 5:25–43; 15:56–64; 20:11–28; 21:21–26; 21:36–48; fig. 2	Proposed Construction **list of applications permitted by the owner for installation** Intrinsic Evidence '571 patent, Figs. 2, 3-6, 9; 1:41-43 ("This system relates generally to electronic devices, and in particular to controlling application installation of such devices by a device owner."), 4:34-5:5 ("…The application lists provide owner control of application installation and deletion on the electronic device...."), 5:25-43 ("The owner information source 224 and the owner control information source 234 could be local memory devices, communication modules through which remote memory devices storing owner information and owner control information are accessible, or possibly user interfaces through which owner information and owner control information are entered."), 6:32-54 ("…In a large company, for example, corporate computer system administrators may be authorized to perform owner information insertion

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		operations from administrator computer systems, or from any corporate computer system from which administrative functions can be accessed, thereby providing multiple owner information insertion points **220**. Similarly, when an owner allows users to insert digitally signed owner control information onto electronic devices, as described above, each user's computer system may be used as an owner control information insertion point **230**...."), 6:55-64 ("…so long as owner control information store is capable of storing a required application list, and in some instances an allowed application list and/or an excluded application list, the particular control information insertion system and method can vary significantly, and use any conventional insertion/interfacing technology, without impacting the owner application control systems and methods discussed herein."), 7:39-53 ("Owner control information, in which an owner of the mobile device 30 specifies usage permissions and restrictions for the mobile device 30…"), 10:3-8 ("In an authorization record, an owner of the mobile device 30 specifies a list of

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		software applications that a user is authorized to install on the mobile device 30…"), 14:19-23 ("An authorization record specifies particular software applications that are authorized for installation on the mobile device 30…"), 14:63-15:16 ("…If no owner control information is present on the mobile device 30, then no owner controls have been established for the mobile device 30, and the software application is installed…."), 15:52-16:56 ("…if an owner generates a hash of each authorized software application and includes the hash in the owner control information that is inserted onto the mobile device 30…"), 17:17-23 ("…identification information associated with installed applications can be transmitted to a remote server managed by the owner that performs the comparison…"), 17:36-40 ("The list or list update can be received in response to a request by the device (e.g., request a list or update at initialization) or without such a request (e.g., responsive to an authorization modification by the owner on a remote owner administration server)."), 17:48-67 ("…Such a write or

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		erase command is not executed unless a digital signature is verified using the owner's digital signature public key stored on the mobile device 30…."), 18:1-61 ("Owner control information may also include an excluded software application list that uniquely identifies software applications that the owner of an electronic device establishes cannot be installed on the device. An excluded software application list allows an owner to ensure that every owned electronic device does not contain particular malicious and/or counter productive software applications."), 19:35-39 ("At step 92, owner control information is established, based on how an owner wishes to control an electronic device. Owner control information, as described above, may include an authorized software application list and a required software application list, for example."), 20:3-28 ("The owner control information, such as the software application lists and the application operation restrictions described above, can be maintained on a remote server managed by the device owner. … In some implementations, a graphical user

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		interface can be provided through which the owner can specify the particular control information associated with a device or device group."), 20:58-21:48 ("…The owner control information on the remote server can be managed in a variety of ways including through provision of a management user interface such as the one depicted in FIG. 9…."), 22:13-24 ("Alternatively, a default action in response to a negative determination at step 114 could be to revert to step 122, when an owner does not wish to restrict device operations before owner control information is inserted…."), 22:43-67 ("…As an example, a system of owner application control of an electronic device can comprise an owner control information store configured to store owner control information for controlling operation of the electronic device, and more specifically installation and/or deletion of applications on the electronic device and/or restrictions on operations by applications once installed…."), 23:5-16 ("Such a method can includes verifying that an application in a required list in an owner control information store is

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		available for execution on the device, and if the application in the required list is not verified as available, initiating download and installation of such application from an external application source such as a computer system or memory device…."); 29:40-44 ("…the owner control information includes an authorization record and an application identifier for each of the applications…") '571 file history, Oct. 8, 2015 Amendment, pp. 9-10 ("…Independent claim has been amended to recite 'wherein the authorization record and the application identifier are included in owner control information stored on the electronic device for each application allowed to be executed on the electronic device, and wherein insertion of additional owner control information onto the electronic device is restricted,' as recited in previously presented, herein canceled, claim 4…."), Claims 1, 12, & 20; Nov. 10, 2015 Final Rejection, pp. 4-8 ("…Fisher shows the principle whereby multiple users on a computer system and the applications associated with that user are granted access to

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		certain local memory and barred access to other local memory…."); Jan. 11, 2016 Amendment, pp. 10-12 ("…Claim 1, as amended, recites: … receiving, by the electronic device, owner control information that identifies permissions associated with applications executable by the electronic device…"), Claims 1, 12, & 20; Apr. 27, 2016 Final Rejection, pp. 3-8 ("…Fisher shows the principle whereby multiple users on a computer system and the applications associated with that user are granted access to certain local memory and barred access to other local memory…."); July 27, 2016 Amendment, pp. 9-13 ("Claim 1, as amended, recites: … receiving, by the electronic device, owner control information that comprises: a list of applications permitted for installation on the electronic device, and"), Claims 1, 12, & 20; Aug. 17, 2016 Notice of Allowance, p. 2 ("The claims as now amended recite 'a list of applications permitted for installation' along with intended permissions for each. This is markedly different from an access control list, because the access control

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		list is a list of permissions for current applications and other files. The access control list would not include files that are not currently on the computer, such as applications not currently installed.")
U.S. Pat. No. 8,610,397		
charging rate *claims 1, 11, 18*	Proposed Construction *No construction required.* Intrinsic Evidence 2:60–3:2 ("By way of example, a particular rechargeable battery may have a higher Voltage and/or current limit associated there with than the portable device it is carried by. In such case, charging the battery at its highest rated Voltage/current level could cause damage to the portable device. Accordingly, the controller may select the actual charging parameter(s) based upon a limiting one of the different portable device and battery charging parameters. Thus, the controller may prevent the battery from being charged using a charging parameter that could damage either the portable device or the battery."); tables 1, 2.	Proposed Construction **the current expressed in amperes at which a battery is charged** Dictionary Evidence The Authoritative Dictionary of IEEE Standard Terms (7th Ed.) (2000), p.163 (definition of "charging rate": "**The current expressed in amperes at which a battery is charged**.") (emphasis added). The New IEEE Standard Dictionary of Electrical and Electronics Terms (5th Ed.) (1993), p.180 (definition of "charging rate": "**The current expressed in amperes at which a battery is charged**.") (emphasis added). Intrinsic Evidence File history of U.S. Patent No. 7,271,568, January 19, 2007 Applicant Remarks ("Moreover, the Examiner further

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		contends that Mori et al. teaches at least one actual charging parameter… As noted above, independent Claims 1, 15, and 25 have been amended to recite that different battery types have respective charging rates, and that the charging circuit charges rechargeable batteries at respective charging rates thereof. Nowhere does Mori et al…. teach or fairly suggest charging different battery types based upon respective charging rates thereof as recited in these claims. Rather, Mori et al. tracks battery voltage, battery temperature, remaining capacity, and charging/discharging cycle information."). *See also* Zane Decl. at ¶¶ 34-36 Extrinsic Evidence Dr. Regan Zane Decl. at ¶¶ 21-42, including ¶ 31 ("the term 'charging rate' does not appear in the specification of the '397 patent") and ¶ 32 ("a POSITA would have understood the term 'charging rate' in the '397 patent claims to mean 'the current expressed in amperes at which a battery is charged'")
U.S. Pat. No. 8,545,247		
~~the housing~~	~~Proposed Construction~~ **a** ~~housing~~	~~Proposed Construction~~ ~~See longer phrase below, indefinite as to~~

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~~*claims 14, 19*~~	~~Intrinsic Evidence~~ ~~All claims; figs. 2, 7; 4:15–31~~ ~~Extrinsic Evidence~~ ~~Garner Report ¶¶ 16–17~~	~~full scope~~
~~the aperture~~ ~~*claim 14*~~	~~Proposed Construction~~ ~~**an** aperture~~ ~~Intrinsic Evidence~~ ~~Claims 1–14; fig. 4; 4:32–50~~ ~~Extrinsic Evidence~~ ~~Garner Report ¶¶ 18–19~~	~~Proposed Construction~~ ~~See longer phrase below, indefinite as to full scope~~
~~the top end being located adjacent the aperture of the housing~~ ~~*claim 14*~~	~~Proposed Construction~~ ~~*No construction required.*~~ ~~Intrinsic Evidence~~ ~~Claim 14~~ ~~Extrinsic Evidence~~ ~~Garner Report ¶¶ 22–24~~	~~Proposed Construction~~ ~~**Indefinite as to full scope**~~
~~a/the connector~~ ~~*claims 12, 13*~~	~~Proposed Construction~~ ~~*The first instance of "**the** connector" should be construed as "**a** connector" and vice versa.*~~ ~~Intrinsic Evidence~~ ~~All claims; figs. 4, 5, 7; 4:32–6:2~~	~~Proposed Construction~~ ~~*No construction required.*~~

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	~~Extrinsic Evidence~~ ~~Garner Report ¶¶ 20–21~~	
support *claims 1, 2, 12–, 13, 15, 16*	Proposed Construction *No construction required.* Intrinsic Evidence Fig. 4; 5:62–65 ("The connector support assembly 308 may be any support that is coupled to the housing 200 and includes a portion that elastically deforms in response to movement of the connector 400"); 2:15–18 Extrinsic Evidence Garner Report ¶¶ 8–10	Proposed Construction **a structure that limits movement in a direction** Intrinsic Evidence '247 patent, Figs. 3, 4, 8, 9, 10; 2:21-23 ("a support coupled to an inner wall of the housing, a portion of the support being elastically deformable;"), 2:38-39 ("wherein the portion of the support elastically deforms in response to non-axial movement of at least a portion of the connector."), 3:67-4:13 ("In one example, the housing 200 includes a seat 302 and a support wall 300 for receiving the portable electronic device 100. In general, the support wall 300 and the seat 302 support the weight of a received portable electronic device 100, although in some of the embodiments depicted herein, the seat 302 may support more weight than the support wall 300. As shown in FIG. 3, an edge surface 304 of the portable electronic device 100 contacts the seat 302 of the housing 200 and a rear surface 306 of the portable electronic device 100 contacts the

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		support wall 300 of the housing 200. The size and shape of the seat 302 and the support wall 300 and the angle between the seat 302 and the support wall 300 may be selected to accommodate different sizes and types of portable electronic devices 100."), 4:18-19 ("The dock 150 includes a connector support assembly 308 that is coupled to an inner surface of the housing 200."), 4:51-57 ("The connector support assembly 308 includes a support 404, a spring component 406, which is received in the support 404, and a flexible pad 412, which is located on a base 408 of the support 404. The base 408 of the support 404 limits movement of the connector 400 in a z-direction to facilitate coupling with a mating connector of the portable electronic device 100."), 5:62-65 ("The connector support assembly 308 may be any support that is coupled to the housing 200 and includes a portion that elastically deforms in response to movement of the connector 400."), 6:42-46 ("Referring still to FIGS. 8, 9 and 10, the connector support assembly 812 includes a support tray 1000, a spring component 1002, which is located in the

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		support tray 1000, and a pad 1004, which is disposed between a base 1008 of the support tray 1000 and the spring component 1002.), 7:49-52 ("The base 1008 of the support tray 1000 limits movement of the connectors 806, 808 in the z-direction to facilitate coupling with mating connectors of the portable electronic device 100.")
inner wall *claims 1, 12–, 13, 15*	Proposed Construction *No construction required.* Intrinsic Evidence Claims 1, 12–15; 4:14–32 Extrinsic Evidence Garner Report ¶¶ 11–15	Proposed Construction **internal upright or vertical structure enclosing a space** Intrinsic Evidence '247, Figs. 3, 4, 5, 8, 10, 12; 2:21-22 ("a support coupled to an inner wall of the housing"), 3:67-4:13 ("In one example, the housing 200 includes a seat 302 and a support wall 300 for receiving the portable electronic device 100. In general, the support wall 300 and the seat 302 support the weight of a received portable electronic device 100, although in some of the embodiments depicted herein, the seat 302 may support more weight than the support wall 300. As shown in FIG. 3, an edge surface 304 of the portable electronic device 100

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		contacts the seat 302 of the housing 200 and a rear surface 306 of the portable electronic device 100 contacts the support wall 300 of the housing 200. The size and shape of the seat 302 and the support wall 300 and the angle between the seat 302 and the support wall 300 may be selected to accommodate different sizes and types of portable electronic devices 100."), 4:18-19 ("The dock 150 includes a connector support assembly 308 that is coupled to an inner surface of the housing 200."), 4:51-57 ("The connector support assembly 308 includes a support 404, a spring component 406, which is received in the support 404, and a flexible pad 412, which is located on a base 408 of the support 404. The base 408 of the support 404 limits movement of the connector 400 in a z-direction to facilitate coupling with a mating connector of the portable electronic device 100.), 4:64-66 ("A collar 418 is located at the top end 414 of the spring component 406 and ribs 410 extend from an inner wall 502 of the passage 500.), 6:34-36 ("The connectors 806, 808, 810 are mounted in a connector support assembly 812, which is coupled

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		to an inner surface of the housing 200.), 6:46-49 ("The spring component 1002 includes tabs 820, which mate with openings 822 in a front wall 824 of the support tray 1000 to generally fix the spring component 1002 relative to the support tray 1000.), 7:3-6 ("Collars 1018 are located at the top end 1202 of the spring component 1002 to surround the passages 1100, 1102 and ribs 1012 extend from inner walls 1014 of the passages 1100, 1102.), 7:10-12 ("Ribs 1012 extend from inner walls 1014 and 1016 of passages 1100 and 1102 of the spring component 1002, respectively.), 8:6-9 ("Referring also to FIG. 14, the support tray 1000 includes openings 1400, which extend through a rear wall 1402 of the support tray 1000 to allow wiring 1404 of the connectors 806, 808, 810 to extend therethrough.") Dictionary Evidence Webster's New World College Dictionary (4th Ed.) (2005), p. 735 (definition of "inner": "located farther within; interior; **internal**.") (emphasis added)

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		Webster's New World College Dictionary (4th Ed.) (2005), p.1609 (definition of "wall": "an **upright structure** of wood, stone, brick, etc., serving to **enclose**, divide, support, or protect.") (emphasis added).
U.S. Pat. No. 8,115,731		
a direction substantially parallel or substantially perpendicular to the orientation. *claim 1*	Proposed Construction *No construction required.* Intrinsic Evidence Claims 1, 12–15; 4:14–32 Extrinsic Evidence Garner Report ¶¶ 25–28	Proposed Construction **Indefinite as to full scope** Extrinsic Evidence Dr. Nathaniel Polish Decl. at ¶¶ 14-47, including ¶ 19 ("it is my opinion that a POSITA would not have had any basis for evaluating what constitutes 'a direction substantially parallel or substantially perpendicular to the orientation' as to its full scope"), and ¶ 21 ("claim language is indefinite on multiple levels—both as to (1) the 'substantially parallel or substantially perpendicular' language and (2) the 'orientation' language"). Intrinsic Evidence '731, Figs. 1-6; 1:49-2:20 ("Directional input devices can be classified as having either one, or a plurality of degrees of

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		freedom…."), 2:54-3:39 ("In classifying directional input devices it should be noted that directional input devices can have both presence and degree…."), 3:44-48 ("Added user operational complexity may be required for simulated uni-dimensional input on devices using traditional multidegree of freedom directional input devices. The same can be said for simulated multidimensional input using traditional single degree of freedom directional input devices."), 3:54-61 ("There is therefore a need for a directional input device with a minimized size, to allow for a larger screen, while reducing the tooling costs associated with apertures on the moulding of the handheld device. There is a further need for a directional device that is capable providing directional input to a handheld without requiring dual handed operation, and without providing a preference to right handed people, left handed people, or people with a particular size of hand."), 4:1-29 ("…In response to inclination of the handheld device in the direction of the directional contact, the circuit closing means moves between a neutral position

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		in which the primary contact and the directional contact form an open circuit, and an active position in which the primary contact and the directional contact form a closed circuit. A direction interpreter, operatively connected to the primary and directional contacts, generates the directional input to the element of the user interface when the closed circuit is formed…."), 5:5-13 ("In another aspect, there is provided a method of controlling an element of a user interface of a handheld device based on the inclination of the handheld device. The method comprises sensing the inclination of the handheld device; generating a directional input signal representative of the inclination of the handheld device; transmitting the generated directional input signal to the user interface of the handheld device; and processing the transmitted directional input signal to control the element of the user interface."), 5:44-6:21 ("…When the handheld device is sufficiently inclined, circuit closing means 25 moves to an active position, in which the open circuit is closed…."), 7:26-67 ("…As illustrated, base 22 is

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		substantially horizontal with respect to line HH….Although not expressly shown in the Figs., many alternative sensors are compatible with the method, such as a solid state compass or gyroscope which senses orientation with respect to magnetic north, or a pendulum such as a tine pendulum, a micro saucer, or a solid state memory device. The choice of an actual orientation sensor is a matter which depends on the application of the present invention to a particular handheld device and the choice of sensor is obvious to those knowledgeable in the field in light of a particular handheld and the present invention."), 8:7-39 ("…Returning to FIG. 6, in the second step 40, the orientation is converted to a direction signal compatible with traditional directional input means, such as a roller, touch pad, or arrow keys, thereby allowing a next generation handheld using the method to reclaim the space used by traditional directional controls such as a thumbwheel…."), 8:53-9:11 ("…At step 40, the sensed orientation and amount of touch pad displacement are converted into a direction signal constrained in a direction

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		substantially perpendicular to the inclination axis….At step 40, the sensed orientation and amount of touch pad displacement are converted into a direction signal constrained in a direction substantially parallel to the inclination axis."), 9:43-10:33 ("…a direction interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.") '731 File History, Oct. 3, 2005 Application, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in· a direction substantially corresponding to an axis of inclination in the axial selecting mode…."); Jan. 2, 2009 Amendment, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode…."); May 28, 2009 Amendment,

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		Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode…."); June 25, 2009 Amendment, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode…."); Oct. 21, 2009 Amendment, pp. 6-8 ("…Claim 1 has been further amended to recite that the graphical element is responsive to the axis of inclination and the second directional input signal…."), Claim 1; Feb. 17, 2010 Amendment, Claim 1 ("…wherein the graphical element moves in a direction substantially perpendicular to the axis of inclination in the axial constraining mode responsive to the second directional input signal, and moves in a direction substantially corresponding to the axis of inclination in the axial

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		selecting mode responsive to the second directional input signal…."); Apr. 9, 2010 Amendment, p. 6 ("…In particular, claim 1 now specifies that the directional input signal indicates an orientation, and the second directional input signal indicates a degree of displacement. Claim 1 was further amended to recite that the graphical element moves relative to the degree of displacement in a direction either parallel or perpendicular to the orientation provided by the directional input signal…."), Claim 1
U.S. Pat. No. 9,313,065		
wherein the pilot symbols for the first antenna correspond to a first code and the pilot symbols for the second antenna correspond to a second code *claims 1, 9, 17, 25, 31, 37*	Proposed Construction *No construction required.* Intrinsic Evidence Claims 1, 9, 17, 25, 31, 37; 8:1–8 ("The STBC block 23 takes two pilot symbols at a time for example P_1 and P_2 … and generates an STBC block consisting of a two by two matrix having (P_1, P_2) in the first row and having ($-P_2^*$, P_1^*) in the second row.") Extrinsic Evidence Shoemake Report ¶¶ 32–36	Proposed Construction **wherein the pilot symbols for the first antenna correspond to a first row/column of a space time block code and the pilot symbols for the second antenna correspond to a second row/column of the space time block code** Intrinsic Evidence '065 patent, 5:4-11 ("In some embodiments, the method further comprises for each location within a scattered pattern in time-frequency:

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		generating a group of L uncoded pilot symbols; performing space time block coding (STBC) on the group of L uncoded pilot symbols to produce an N×N STBC block, L and N determining an STBC code rate; transmitting one row or column of the STBC block on each antenna on a specific sub-carrier."); 5:65-6:3 ("In some embodiments, the transmitter is further operable to, for each location in the scattered pattern: generate a group of L uncoded pilot symbols; perform space time block coding (STBC) on the group of L pilot symbols to produce an N×N STBC block; transmit one row or column of the STBC block on each antenna."); 8:1-17 ("The pilot inserter 24 is connected to receive space-time coded pilot symbols from pilot STBC function 23 which performs STBC on pilot symbols 21. The pilot STBC block 23 takes two pilot symbols at a time for example P1 and P2 as indicated in FIG. 2 and generates an STBC block consisting of a two by two matrix having (P1, P2) in the first row and having (−P2*, P1*) in the second row. It is the first row of this STBC block that is inserted by the pilot inserter 24.

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		The data symbols sent along the second processing path 18 are sent to a second OFDM component 38 which includes processors similar to those included in the first OFDM component 20. However, the pilot inserter 40 inserts encoded pilot symbols from the second row of the STBC block produced by the pilot STBC function 23. The symbols sent along the second processing path 18 are ultimately transmitted as a signal through a second transmitting antenna 42."); 9:19-36 ("Referring now to FIG. 4, a method by which each of the pilot inserters 24 and 40 of FIG. 2 inserts pilot symbols among the data symbols is shown. The method will be described with reference to the pilot inserter 24 in the first OFDM component 20. At step 100, the pilot inserter 24 receives data symbols from the demultiplexer 22. At step 102 the pilot STBC function 23 generates (or receives) two pilot symbols. At step 104 the pilot STBC function 23 applies STBC encoding to the pilot symbols, so as to generate an STBC block of encoded pilot symbols. The encoded pilot symbols generated for the first transmitting antenna 37 will be one row

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		of the STBC block and will have a number equal to the number of transmitting antennae in the OFDM transmitter. Thus, for a two antenna system a 2×2 STBC block is generated. At step 106 the pilot inserter 24 inserts the encoded pilot symbols within the OFDM symbol. Encoded pilot symbols are inserted in a diamond lattice pattern."); 10:62-11:15 ("Let P_1 and P_2 be the two pilot symbols encoded in an STBC block and transmitted by two antennas on one sub-carrier in consecutive OFDM symbols. Then at the first receive antenna, the following relationship exists for each sub-carrier on which pilot symbols are transmitted, where it is assumed the channel response H_{ij} is constant over two OFDM frames: [equation omitted] $Y_{1,1}$ is the received data on the first antenna on the sub-carrier in the first of the two consecutive OFDM symbols, and $Y_{1,2}$ is the received data on the first antenna on the sub-carrier in the second of the two consecutive symbols. This can be solved for H_{11}, H_{21} to yield: [equation omitted].")

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		File History for U.S 10/038883 at January 30, 2006 OAR, Inventor Affidavit (Nortel Networks Invention Disclosure, page 2 ("In this invention, space-time-block-coding (STBC) is applied to the scattered pilots in the frequency domain without additional overhead.").) Extrinsic Evidence File History for U.S 10/038883 at January 30, 2006 OAR, Inventor Affidavit (Nortel Networks Invention Disclosure, page 2 ("In this invention, space-time-block-coding (STBC) is applied to the scattered pilots in the frequency domain without additional overhead.").)
U.S. Pat. No. 7,529,305		
mth *claim 6*	Proposed Construction (m=1, …,M)th Intrinsic Evidence 3:14–16 ("For example, the delay elements can be adapted to introduce a delay of m-1 symbol periods in the mth orthogonal output, where m=1,..., M.")	Proposed Construction *No construction required.*

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	Extrinsic Evidence Shoemake Report ¶¶ 48–51	
m-1 *claim 6*	Proposed Construction ((m=1, …,M) – 1) Intrinsic Evidence 3:14–16 ("For example, the delay elements can be adapted to introduce a delay of m-1 symbol periods in the mth orthogonal output, where m=1,..., M.") Extrinsic Evidence Shoemake Report ¶¶ 48–51	Proposed Construction *No construction required.*
a delay arrangement, arranged such that for each symbol of the M symbol substreams a time of representation of the symbol in the M space-time coded streams is different for each of the M space-time coded streams *claim 1*	Proposed Construction *No construction required.* Intrinsic Evidence Claim 1; fig. 5; 4:52–5:35 Extrinsic Evidence Shoemake Report ¶¶ 38–42	Proposed Construction **a time delay arrangement, arranged such that for each symbol of the M symbol substreams a time of representation of the symbol in the M space-time coded streams is different for each of the M space-time coded streams** Intrinsic Evidence '305 patent, 3:7-31 ("In some embodiments, the space-time coding function has an orthogonal transform adapted to produce M orthogonal outputs each of which is a function of the M substreams, and has delay elements

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		adapted to insert delays in the M orthogonal outputs to produced M delayed orthogonal outputs such that each of the M delayed orthogonal outputs is a function of a given element of each of the M substreams at a different time. For example, the delay elements can be adapted to introduce a delay of m−1 symbol periods in the mth orthogonal output, where m=1, . . . , M."); 4:8-11 ("There is an orthogonal transformation block 30 and a number of delay blocks 32 (only two shown, 32*m*−1, 32M−1) the outputs of which are connected to respective transmit antennas 34A, . . . , 34M."); 4:43-67 ("Now, to achieve the separation in time, the mth orthogonal transformation output xm is delayed by a time period equal to (m−1)T, where T is the symbol duration, such that the first output x_1 experiences no delay, and the Mth output x_M experiences a delay of (M−1)T. The output of the delay blocks 32 consists of the symbols z_1, . . . , z_M to be transmitted on the antennas 34. The effect of the orthogonal transformation 30 plus the delay blocks 32 is that the mth input symbol s_m is represented in all m output streams, but at different times.

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		Referring now to FIG. 5, another embodiment of the invention is provided in which the encoded and modulated symbols s_m are fed through respective delay banks 40 (40A, . . . , 40M) each containing M−1 delay elements. Each symbol with equal delay is fed to a common scaling block 42. Thus, all undelayed symbols s_1, . . . , s_M are fed to a first scaling block 42 *a*, the symbols s_1, . . . , s_M delayed by (m−1)T are fed to an mth scaling block 42*m* and so on. Each scaling block 42*m* multiplies each of its inputs by a respective complex multiplier, and the results are summed in a respective summer 44*m* the output of which is the mth transmitted symbol z_m. This is really mathematically equivalent to the embodiment of FIG. 4 in that each output symbol z_m is again a function of all of the input symbols at a given instant, but at different times. Effectively, the delay block and the orthogonal transformation functions have been done in reverse order."); 5:4-13 ("Referring now to FIG. 6, another embodiment of the invention is provided in which bit-level space-time encoding is performed. In this embodiment, a 1:M demultiplexer

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		59 produces from an input bit stream 58M bit substreams $u_1, \ldots, u_M$ which are all fed into delay elements 60A, . . . , 60M−1 each adding a further bit period T delay."); 5:21-26 ("In this case, it is assumed that the demultiplexer 59 is a 1:4 demultiplexer which produces four bit substreams u_1, u_2, u_3, u_4 which are all fed undelayed to a first 16 QAM mapping 62A, and are all fed to a delay element 60 which introduces a delay T into the substreams and outputs the delayed substreams into a second 16 QAM mapping 62B.").
delay elements adapted to insert a delay in at least one of the M substreams *claim ~~2~~6*	Proposed Construction *No construction required.* Intrinsic Evidence Claim ~~2~~6 Extrinsic Evidence Shoemake Report ¶¶ 43–47	Proposed Construction **delay elements adapted to insert a time delay in at least one of the M symbol substreams** Intrinsic Evidence '305 patent, 3:7-31 ("In some embodiments, the space-time coding function has an orthogonal transform adapted to produce M orthogonal outputs each of which is a function of the M substreams, and has delay elements adapted to insert delays in the M orthogonal outputs to produced M

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		delayed orthogonal outputs such that each of the M delayed orthogonal outputs is a function of a given element of each of the M substreams at a different time. For example, the delay elements can be adapted to introduce a delay of m−1 symbol periods in the mth orthogonal output, where m=1, . . . , M."); 4:8-11 ("There is an orthogonal transformation block 30 and a number of delay blocks 32 (only two shown, 32*m*−1, 32M−1) the outputs of which are connected to respective transmit antennas 34A, . . . , 34M."); 4:43-67 ("Now, to achieve the separation in time, the mth orthogonal transformation output xm is delayed by a time period equal to (m−1)T, where T is the symbol duration, such that the first output x_1 experiences no delay, and the Mth output x_M experiences a delay of (M−1)T. The output of the delay blocks 32 consists of the symbols z_1, . . . , z_M to be transmitted on the antennas 34. The effect of the orthogonal transformation 30 plus the delay blocks 32 is that the mth input symbol s_m is represented in all m output streams, but at different times. Referring now to FIG. 5, another embodiment of the invention is provided

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		in which the encoded and modulated symbols s_m are fed through respective delay banks 40 (40A, . . . , 40M) each containing M−1 delay elements. Each symbol with equal delay is fed to a common scaling block 42. Thus, all undelayed symbols s_1, . . . , s_M are fed to a first scaling block 42 *a*, the symbols s_1, . . . , s_M delayed by (m−1)T are fed to an mth scaling block 42*m* and so on. Each scaling block 42*m* multiplies each of its inputs by a respective complex multiplier, and the results are summed in a respective summer 44*m* the output of which is the mth transmitted symbol z_m. This is really mathematically equivalent to the embodiment of FIG. 4 in that each output symbol z_m is again a function of all of the input symbols at a given instant, but at different times. Effectively, the delay block and the orthogonal transformation functions have been done in reverse order."); 5:4-13 ("Referring now to FIG. 6, another embodiment of the invention is provided in which bit-level space-time encoding is performed. In this embodiment, a 1:M demultiplexer 59 produces from an input bit stream 58M bit substreams u_1, . . . , u_M which are

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		all fed into delay elements 60A, . . . , 60M−1 each adding a further bit period T delay."); 5:21-26 ("In this case, it is assumed that the demultiplexer 59 is a 1:4 demultiplexer which produces four bit substreams u_1, u_2, u_3, u_4 which are all fed undelayed to a first 16 QAM mapping 62A, and are all fed to a delay element 60 which introduces a delay T into the substreams and outputs the delayed substreams into a second 16 QAM mapping 62B.").

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