

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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ONEPLUS TECHNOLOGY (SHENZHEN) CO., LTD.,  
Petitioners,

v.

PANTECH CORPORATION,  
Patent Owner

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**IPR2025-00763**

**U.S. Patent No. 11,212,838**

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**DECLARATION OF JASON DUGGAN  
IN SUPPORT OF PATENT OWNER'S RESPONSE TO PETITION  
FOR *INTER PARTES REVIEW* OF U.S. PATENT NO. 11,212,838**

**Mail Stop Patent Board**  
Patent Trial and Appeal Board  
U.S. Patent and Trademark Office  
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**LISTING OF CHALLENGED CLAIMS**

<b>Claim</b>	<b>Claim Text</b>
1[pre]	A wireless transmit/receive unit (WTRU) comprising:
1[a]	a receiver;
1[b]	a transmitter; and
1[c]	a processor;
1[d]	wherein the receiver and the processor are configured to receive at least one radio resource control (RRC) message indicating uplink resources for WTRU and medium access control (MAC) timer information,
1[e]	the transmitter and the processor are configured to transmit uplink data based on the indicated uplink resources,
1[f]	the processor is configured to deactivate the indicated uplink resources in response to a MAC timer expiring, and
1[g]	the MAC timer is configured based on the MAC timer information indicated by the received RRC message.
2	The WTRU of claim 1 wherein the receiver and the processor are configured to receive an uplink grant associated with the indicated uplink resources and the transmitter and the processor are configured to transmit using the indicated uplink resources based on the grant.
3	The WTRU of claim 2 wherein based on the receipt of the uplink grant, the WTRU does not deactivate the indicated uplink resources.

4	The WTRU of claim 1 wherein the receiver and the processor are configured to receive a deactivation message and the processor is configured to deactivate the uplink resources based on the received deactivation message.
5	The WTRU of claim 1 wherein the MAC timer is based on a number of frames.
6[pre]	A method comprising:
6[a]	receiving, by a wireless transmit/receive unit (WTRU), at least one radio resource control (RRC) message indicating uplink resources for WTRU and medium access control (MAC) timer information;
6[b]	transmitting, by the WTRU, uplink data based on the indicated uplink resources; and
6[c]	deactivating, by the WTRU, the indicated uplink resources in response to a MAC timer expiring,
6[d]	wherein the MAC timer is configured based on the MAC timer information indicated by the received RRC message.
7	The method of claim 6 further comprising receiving, by the WTRU, an uplink grant associated with the indicated uplink resources and transmitting, by the WTRU, using the indicated uplink resources based on the grant.
8	The method of claim 7 wherein based on the receipt of the uplink grant, the WTRU does not deactivate the indicated uplink resources.
9	The method of claim 7 further comprising receiving, by the

	WTRU, a deactivation message and deactivating, by the WTRU, the uplink resources based on the received deactivation message.
10	The method of claim 7 wherein the MAC timer is based on a number of frames.

## **I. INTRODUCTION**

1. My name is Jason Duggan. I have been asked by Patent Owner, Pantech Corporation (“Pantech”), to provide my opinion as to the patentability of claims 1-10 (the “Challenged Claims”) of U.S. Patent No. 11,212,838 (“’838 Patent”). I have also been asked to provide my understanding of the level of ordinary skill in the art related to this patent, as well as to explain the relevant technical background related to this patent.

2. Depending on new information learned during this proceeding, or positions taken throughout this IPR by Petitioner or its expert, I may edit, add to, or otherwise refine the topics and expected testimony described here. I reserve the right to supplement my opinions based on new information.

3. If called upon to do so, I am prepared to testify regarding my opinions expressed here.

## **II. BACKGROUND AND QUALIFICATIONS**

4. I am an expert in the field of high-speed telecommunications and computing, and the development of electronic devices and software systems and related applications. I am currently a Telecommunications Technical Consultant.

5. I received a B.Sc. degree in Engineering Physics in 1994, and a M.Sc. degree in Electrical Engineering in 1996 from Queen’s University in Kingston, Ontario, Canada. My M.Sc. thesis was titled “Adaptive Beamforming with a Focal-

Fed Offset Parabolic Reflector Antenna”.

6. After receiving my M.Sc. in Electrical Engineering, I worked at a government research lab called the Communications Research Center as a designer on a Fixed Wireless System called Milton. I designed antennas, RF sub-systems, modem algorithms and did system design.

7. In January 2000, I joined the Wireless Advanced Technology group of Nortel Networks. This group was responsible for all of the forward-thinking wireless research for Nortel’s wireless business developing leading edge concepts such as MIMO and OFDM which are the foundational concepts of 4G and 5G cellular systems (and also now a foundational concept of Wi-Fi). I had a wide range of responsibilities in my years there developing and testing prototypes, building pre-production DSP modems for CDMA2000, leading the effort to develop a converged UMTS / CDMA2000 modem, supporting the efforts of Nortel to get MIMO and OFDM into the 3GPP 4G specifications, building an OFDM 4x4 MIMO prototype using a mix of FPGA and DSPs, technical lead for the WiMax MIMO prototype and overall responsibility for the receiver. I also was a member of the patent review board that internally reviewed potential ideas for patents.

8. In 2007 I joined Nortel Networks 40G and 100G Optical group as a System Design prime. I was the system co-prime for the 100G product and customer

trial support prime presenting the latest optical product developments to Nortel's top customers.

9. In 2008 I joined Blackberry as member of the technical staff designing an in-house LTE modem and was there until 2014. I was the team lead of the Communications System Design team and LTE simulator design prime building a full LTE simulator for algorithm development and performance evaluation. I went on to be a LTE systems design prime and technical lead for the team developing the LTE L1 model algorithms including channel estimation, cell search, tracking loops and RSRP/RSRQ measurement. After this I was the technical lead for a team of developers delivering LTE-TDD.

10. Since 2015 I have been a telecommunications technical consultant doing modem development work, wireless testing and providing my technical expertise on patent cases. Through the testing work I've developed an expertise in Wi-Fi and Bluetooth wireless systems going beyond my core expertise in 4G and 5G cellular systems.

11. I am a named inventor on eleven U.S. patents.

12. Additional details of my education and work experience, awards and honors, and publications that may be relevant to the opinions I have formed are set forth in my curriculum vitae. *See Appendix A.*

### III. UNDERSTANDING OF LEGAL STANDARDS

13. I am not a lawyer and I am not offering any opinions regarding legal matters. However, the legal principles relevant to my opinion herein have been explained to me by Patent Owner's counsel. In this section, I summarize these legal principles as they have been explained to me.

14. I reserve the right to change or formulate new opinions in the event there is a change in the law concerning my opinions provided in this report.

#### A. Claim Construction

15. I understand the general rule that claim terms are given their plain and ordinary meaning to a person of ordinary skill in the art (POSITA), in view of the specification of the patent, at the time of the invention. I also understand that the intrinsic evidence (*i.e.*, the claims, the written description including the figures, and prosecution history) are the primary sources used in interpreting claim language.

16. I have not been asked to opine upon or apply any claim constructions beyond the plain and ordinary meaning of claim terms. Accordingly, I have applied the plain and ordinary meaning in interpreting the claims of the Challenged Patents.

#### B. Presumption of Validity

17. I understand that all patents enjoy a presumption of validity. In other words, patents are presumed to have been correctly issued by the United States Patent and Trademark Office after undergoing a rigorous examination process that

often lasts for years.

18. For this reason, I understand that Petitioner bears the burden to show invalidity of the '838 Patent's claims by a "preponderance of the evidence."

**C. Obviousness**

19. I understand that a patent claim can be invalid under 35 U.S.C. § 103 if the claimed subject matter would have been "obvious" to a person of ordinary skill in the art as of the priority date of the patent based upon one or more prior art references. I understand that an obviousness analysis should consider each of the following so-called "*Graham* factors": (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations, if any (such as unexpected results, commercial success, long felt but unsolved needs, failure of others, copying by others, licensing, and skepticism of experts).

20. I understand that a conclusion of obviousness may be based upon either a single prior art reference or a combination of prior art references, particularly if the combination of elements does no more than yield predictable results. However, I understand that merely demonstrating that each of the claim elements was, independently, known in the prior art does not prove that a patent composed of several claim elements is obvious.

21. Moreover, I understand that it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in a way the claimed new invention does.

22. I further understand that, to determine obviousness, courts look to the interrelated teachings of multiple patents or other prior art references, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art.

23. I also understand that, in determining whether a combination of prior art references renders a claim obvious, it may be helpful to consider whether there is some teaching, suggestion, or motivation to combine the references and a reasonable expectation of success in doing so. I understand, however, that the teaching, suggestion, or motivation to combine inquiry is not required and may not be relied upon in lieu of the obviousness analysis outlined above.

24. I understand that the following exemplary rationales may lead to a conclusion of obviousness: the combination of prior art elements according to known methods to yield predictable results; the substitution of one known element for another to obtain predictable results; and the use of known techniques to improve similar devices in the same way.

25. However, a claim is not obvious if the improvement is more than the

predictable use of prior art elements according to their established functions. Similarly, a claim is not obvious if the application of a known technique is beyond the level of ordinary skill in the art.

26. Further, when the prior art teaches away from combining certain known elements, discovery of successful means of combining them is not obvious. I understand that similar subject matter may not be sufficient motivation for a person of skill in the art to combine references if the references have conflicting elements.

27. I understand that, in order to be used in an obviousness combination, a prior art reference must be “analogous.” I understand that a prior art reference may be analogous if it is in the same field of endeavor as the other references with which it is combined, or if the reference is reasonably pertinent to the solving the problems the inventors of the patent-at-issue sought to solve.

28. I understand that obviousness of a patent claim cannot properly be established through hindsight, and that elements from different prior art references, or different embodiments of a single prior art reference, cannot be selected to create the claimed invention using the invention itself as a roadmap. I understand that the claimed invention as a whole must be compared to the prior art as a whole, and courts must avoid aggregating pieces of prior art through hindsight that would not have been combined absent the inventor’s insight.

29. I understand that obviousness is not established by simply combining previously known elements from the prior art. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. An invention is unpatentable as obvious if the differences between the patented subject matter and the prior art would have been obvious at the time of invention to a person of ordinary skill in the art.

30. I understand that obviousness of a patent cannot properly be established by mere conclusory statements. Instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. When an expert opines that all the elements of a claim disparately exist in the prior art, the expert should provide the rationale to combine the disparate references. A reason for combining disparate prior art references is a critical component of an obviousness analysis. The obviousness analysis should be made explicit and needs to provide an articulated reasoning with some rational underpinning to identify the reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.

31. I also understand that inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known. This is another

reason why merely pointing to the elements being known in the art in separate locations is not the end of the obviousness inquiry.

32. I understand that technical experts may testify to matters like the level of skill in the art at the time of the invention and what a skilled artisan might find obvious in light of the prior art without addressing objective indicia of non-obviousness. However, where an expert purports to testify not just to certain factual components underlying the obviousness inquiry, but to the ultimate question of obviousness, the expert must consider all factors relevant to that ultimate question, including all objective evidence of nonobviousness.

#### **D. Secondary Considerations**

33. I understand that one of the so-called *Graham* factors that must be considered in determining obviousness is the existence of any secondary considerations, which tend to show that a patent claim is not obvious. Such secondary considerations of nonobviousness of a patent include: (1) long-felt and unmet need in the art that was satisfied by the claimed invention of the patent; (2) failure of others to achieve the results of the claimed invention; (3) commercial success or lack thereof of the products and processes covered by the claimed invention; (4) deliberate copying of the claimed invention by others in the field; (5) taking of licenses under the patent by others; (6) whether the claimed invention was

contrary to the accepted wisdom of the prior art; (7) expression of disbelief or skepticism by those skilled in the art upon learning of the claimed invention; (8) unexpected results achieved by the claimed invention; (9) praise of the claimed invention by others skilled in the art; and (10) lack of contemporaneous and independent invention by others.

34. I understand that each of these considerations may form an independent basis for nonobviousness of a patent. I also understand that the fact that another person simultaneously and independently created the same invention claimed in an asserted patent can serve as an indication that the invention was obvious.

35. I also have been informed by counsel that there must be a nexus between any such secondary considerations and the claimed invention.

#### **IV. MATERIALS CONSIDERED**

36. I considered the following materials at the time I formed my opinions set forth herein. Among those materials are the '838 Patent (EX1001); the file history of the '838 Patent (EX1002); OnePlus's Petition (Paper 2) and all accompanying exhibits, including Dr. Titus Lo's declaration (EX1003); the Institution Decision (Paper 8); all other papers and exhibits filed in this IPR; and other materials that I specifically cite to and mention throughout my declaration.

37. In addition to these materials, I also relied upon my extensive experience and expertise in electrical engineering and telecommunications technology as discussed above. In forming my opinions, I have also taken into account the knowledge and background principles that a person of ordinary skill in the art would be familiar with, as well as my experience and training in the field of art.

## **V. OVERVIEW OF THE '838 PATENT**

### **A. Background**

38. The '838 Patent relates to the field of wireless communications. More particularly, it sets forth an invention for transmitting uplink data on uplink resources (an enhanced dedicated channel (E-DCH)) including releasing the dedicated channel resources based on a MAC timer configured through Radio Resource Control (RRC) messages. '838 Patent at Abstract, 2:1-6. The invention of the '838 Patent is directed to solving problems arising from the increased prevalence of non-real-time data services (*e.g.*, internet browsing, email). '838 Patent at 1:37-2:25. Unlike the prevailing voice data which is continuous these non-real-time services exhibit a bursty nature with long periods of inactivity. The previous solution was the use of random access based transmission channels but collisions between transmissions by multiple wireless transmit receive units (WTRUs) (*e.g.*, cellular phones) led to significant inefficiencies. '838 Patent at 1:37-2:25. An Enhanced Dedicated Channel

(E-DCH) and Enhanced Random Access (E-RACH) led to higher efficiencies but there were no methods to terminate the E-RACH message phase and releasing E-DCH resources. '838 Patent at 1:37-2:49.

39. At a high level, the solution arrived at by the inventors of the '838 Patent includes the use of one or more radio resource control (RRC) messages that include medium access control (MAC) timer information, with the expiry of that MAC timer used by the processor of the WTRU to deactivate the established dedicated uplink resources. *See* '838 Patent at claims 1, 6. "The timer module may be configured to indicate the maximum allowable transmission time for a logical channel (*i.e.*, dedicated control channel (DCCH), dedicated traffic channel (DTCH), common control channel (CCCH), etc.)." '838 Patent at 4:29-37. Using the invention of the '838 Patent, dedicated channels can be terminated in an effective manner benefitting from the increased data rate of that dedicated transmission channel (over that of a random access channel (RACH)).

40. Relevant to this Petition and its deficiencies, the '838 Patent discusses that the invention can be implemented, *inter alia*, with a "timer." '838 Patent at 6:1-29. This "timer" is triggered by an event: "The timer may start as soon as the radio resource control (RRC) provides the MAC with the timer values, and after receiving the E-DCH resource index 502. The timer may start if the WTRU 210

starts the first dedicated physical control channel (DPCCH) preamble transmission 503.” ’838 Patent at 5:9-13; *see also* Fig. 5.

41. The ’838 Patent claims priority to U.S. Patent No. 10,306,677, filed on Oct. 6, 2015; U.S. Patent No. 9,313,809, filed on Jun. 30, 2014; U.S. Patent No. 8,774,104, filed on Sept. 26, 2008; U.S. Provisional Patent Application No. 60/975,985, filed on Sept. 28, 2007; U.S. Provisional Patent Application No. 60/982,528, filed on Oct. 25, 2007; U.S. Provisional Patent Application No. 61/018,999, filed on Jan. 4, 2008; U.S. Provisional Patent Application No. 61/025,441, filed on Feb. 1, 2008; U.S. Provisional Patent Application No. 61/038,576, filed on Mar. 21, 2008; U.S. Provisional Patent Application No. 61/074,288, filed on Jun. 20, 2008; and U.S. Provisional Patent Application No. 61/083,409, filed on Jul. 24, 2008.

### **B. Summary of Cited References**

42. Based on the Institution Decision (“ID”) (Paper 8), it is my understanding that the Board instituted this IPR for claims 1-10 of the ’838 Patent based on two grounds of alleged unpatentability. *See* ID at 5. The instituted grounds are the following:

<b>Ground</b>	<b>Challenged Claims</b>	<b>Basis</b>	<b>Reference</b>
1	1-10	§ 103 (obviousness)	Zeira

2	1-10	§ 103 (obviousness)	Zeira, Yi
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### 1. Zeira (EX1005)

43. U.S. Patent Application Pub. No. 2004/0114574 (“Zeira”) corresponds to a patent application filed on May 29, 2003. Zeira “relate[s] to establishing the temp-DCH [temporary dedicated channel] channel, determining the data rate and duration of the channel.” Zeira at ¶ 6 (summary).

44. The purpose of Zeira is to improve the efficiency of dedicated channels which are left idle between bursts of packet-based transmissions. *Id.* at ¶ 3-4. It does this through the establishment of a temporary (temp) channel allocation. *Id.* at ¶ 34 “The temp allocation is an assignment of a DCH with a predetermined duration. After that duration, the DCH is automatically released and the connection is returned to common channels.” *Id.* at ¶ 34.

45. “Management of starting and controlling the packet switched connection is handled between the S-RNC 508 and C-RNC 506.” *Id.* at ¶ 35. “The C-RNC 506 makes the resource allocation.” *Id.* at ¶ 51. The S-RNC and C-RNC are network-side devices.

46. Zeira discloses that a servicing radio network controller (S-RNC) “computes a duration (transmission time period) based on the time required to transmit available data and/or data predicted to arrive, 108. If the duration is

computed, this information may be transmitted to the WTRU 500.” *Id.* at ¶ 74.

47. “If the duration information is not transmitted to the WTRU 500, the S-RNC 508 sends a termination message to both the WTRU 500 and C-RNC 506.” *Id.* at ¶ 75.

48. “Prior to the termination of the temp-DCH transmission, the amount of data not transmitted may be evaluated and the S-RNC 508 may request additional resources to transmit the data.” *Id.* at ¶ 74.

49. Zeira does not disclose what the WTRU may or may not do with the “duration” information. Zeira also does not disclose that any transmission of “duration” information to the WTRU occurs via RRC messaging.

## **2. Yi (EX1006)**

50. U.S. Patent Application Pub. No. 2005/0174956 (“Yi”) corresponds to a patent application filed on January 10, 2005. Yi concerns “releasing a point-to-multipoint radio bearer for a multicast or broadcast service in a mobile terminal, and in particular, to determining the releasing of the point-to-multipoint radio bearer by checking a status of the multicast or broadcast service when a data of the multicast or broadcast service is not received for a certain period of time after the mobile terminal establishes the point-to-multipoint radio bearer and receives the data of the multicast or broadcast service.” Yi at ¶ [0002]. Yi thus concerns inactivity timers

tied to the download of data by a mobile terminal, and discloses that these timers may be controlled by PDCP, RLC, or MAC entities. *Id.* at ¶ [0039]

## **VI. LEVEL OF ORDINARY SKILL**

51. Based on my review of the Petition, it is my understanding that Petitioner and Dr. Lo propose that a person of ordinary skill in the art (POSITA) would have had “ a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related field and at least two years of practical experience with design or development of telecommunication and/or wireless communications systems, or the equivalent” and that “[l]ack of work experience can be remedied by additional education, and vice versa.” EX1003 at ¶ 21.

52. While I do not necessarily agree with this definition of a POSITA, I have applied it in providing my opinions herein. I qualify as a POSITA under this definition.

## **VII. NONE OF THE CHALLENGED CLAIMS ARE RENDERED OBVIOUS BY THE REFERENCES CITED IN THE PETITION**

53. In my opinion, Petitioner has failed to show by a preponderance of the evidence that either of Grounds 1 or 2 renders obvious claims 1-10 of the '838 Patent.

### **A. Zeira and '838 Patent Provide Non-Analogous Solutions**

54. One important contextual difference between Zeira and the situation

described in the '838 Patent is that '838 Patent is explicitly directed at a use case for uplink data from the WTRU to the network while Zeira is a bi-directional data transmission use case (which tends to be downlink dominated). In other words, they present non-analogous solutions and there are important operational distinctions in terms of which side of the link, the network or the mobile unit, is aware of what data needs to be sent.

55. The '838 Patent presents an uplink-oriented solution: “When a wireless transmit receive unit (WTRU) has data to transmit to the network, the WTRU requires access to the radio resources before transmitting its data payload.” '838 Patent at 1:38-41. “To overcome these difficulties, it was proposed to use the enhanced dedicated channel (E-DCH) in the CELL\_FACH state to increase the data rate of the shared channel.” '838 Patent at 2:4-6.

56. Zeira, in contrast, is directed to a bi-directional use case: “After the user requests the service, typically, dedicated uplink and downlink channels are established to support the services.” Zeira at ¶ 4. “In summary, it is important to define a guaranteed bit rate for temp-DCH allocations in both uplink and downlink directions.” Zeira at ¶ 50.

57. Besides making it clear that these are not directly analogous situations the importance of this distinction is that Zeira describes a much more network driven

process and that affects how POSITA would interpret the obvious operations for each side. In this bi-directional case, the network can more readily assess how much data needs to be sent to the WTRU and make determinations about whether to allocate resources or terminate connections: “Management of starting and controlling the packet switched connection is handled between the S-RNC 508 and C-RNC 506.” *Id.* at ¶ 35. “The C-RNC 506 makes the resource allocation.” *Id.* at ¶ 51. “If the duration information is not transmitted to the WTRU 500, the S-RNC 508 sends a termination message to both the WTRU 500 and C-RNC 506.” *Id.* at ¶ 75. In other words, Zeira presents a network-focused invention.

**B. Ground 1: Zeira Fails to Render Obvious Claims 1-10**

58. In my opinion, Petitioner has failed to provide a showing that any of claims 1-10 are obvious based on Zeira by a preponderance of the evidence, as I will explain below.

**1. Zeira Fails to Render Obvious Claim Elements 1[d], [f], and [g] and 6[a], [c], and [d] For Failure to Teach or Suggest a MAC Timer**

59. Zeira does not teach or suggest a MAC timer as claimed by independent claims 1 and 6 of the '838 Patent (and specifically, as set forth in claim elements 1[d], [f], and [g] and 6[a], [c], and [d]).

60. Based on my review of Zeira and applying the knowledge of a POSITA,

the Petition fails to establish that Zeira would have rendered obvious these claim elements.

61. In the portions of Zeira pointed to by Dr. Lo and the Petition (generally, Zeira at ¶¶ 6, 14, 36-38, 40-50, 52, 53, 74, 76-87, 99, 326, 329, 338, 393-403, 423, Figs 2, 8), Zeira at most discloses that “After resources are granted, the S-RNC 508 computes a duration (transmission time period) based on the time required to transmit available data and/or data predicted to arrive, 108. If the duration is computed, this information may be transmitted to the WTRU 500.” *See* Zeira at ¶ 74. “The C-RNC 506 or S-RNC 508 may determine the duration of the temp-DCH transmissions. The preferred duration calculation is based on the amount of buffered data for each WTRU 500 and the associated priorities.” Zeira at ¶ 76.

62. Zeira does not teach any form of a MAC timer. First, it does not teach a timer which is an active unit with a specific start moment and action to perform on the completion of the timer. Instead, Zeira merely computes a time duration which is just a passive quantity. It is not a timer or a timer configuration.

63. Second, the time duration which Zeira computes is not identified by Zeira as being at the MAC layer. At both the network and WTRU sides the functionality is divided into multiple layers. For the user plane there is the physical layer, MAC layer, RLC layer, and PDCP layer. Zeira refers to the duration as a

“transmission time period”, “based on the time required to transmit available data and/or data predicted to arrive”. *See Zeira* at ¶ 74. This wording strongly implies that this is a physical layer timer as the physical layer is responsible for the transmission of data. As such, POSITA would naturally determine that the transmission duration referred to by Zeira applies to the physical layer, not the MAC layer.

64. Dr. Lo asserts that a POSITA would look to establish a MAC-specific timer in the WTRU because Zeira discloses that the temp-DCH duration is calculated as a number of Transmission Time Intervals (TTIs). *See EX1003* at ¶ 111 (citing Zeira at ¶¶ 77-79, 397). TTIs are not a MAC-specific quantity. In fact, this is further evidence that the duration Zeira is referring to is a physical layer quantity as a TTI is the fundamental unit of time for the physical layer coding and transmission of the signal over the air. TTIs are squarely a physical layer concept grounded in the most fundamental aspect of wireless communications: the duration a transmission occupies the over-the-air bandwidth. That time duration (i.e the TTI) is a central physical layer design decision that affects how well the physical signal can be decoded taking into consideration physical layer signal processing factors such as time diversity since the interleaver spans one TTI. *See EX1007* (3GPP TS 36.300) at Section 5.1.7 (Physical layer procedure) (“The same coding and modulation is applied to all groups of resource blocks belonging to the same L2 PDU scheduled to

one user within one TTI and within a single stream.”). The TTI which is the fundamental basis of physical layer transmission then naturally permeates up the other layers of the protocol stack to the MAC, RLC and PDCP layers. In other words, I agree with Dr. Lo that Zeira’s temp-DCH duration is calculated as a number of Transmission Time Intervals (TTIs), but disagree with his assessment that this characterizes it as a MAC-specific quantity or suggests a timer in any way.

65. The Petitioner and Dr. Lo argue that the transmission of duration information to the WTRU necessarily means that the duration value transmitted to the WTRU would be used for a timer: “A POSITA would have further understood and found it obvious that the duration sent by the S-RNC to the WTRU indicated MAC timer information because the WTRU MAC layer is configured with this information. Zeira, ¶ 423.” See EX1003 at ¶ 111. Besides the unsupported assertion that it is the WTRU MAC layer that is configured with this information, it is conclusory to state that a duration quantity must be used to configure a timer. Nothing in Zeira specifies that this is the case as Zeira does not describe a timer operating in the WTRU at all, and indeed does not specify what the WTRU is to do with the time duration value that is sent to it.

66. Zeira teaches that the temp-DCH is controlled and terminated by the network. It is the network which determines the transmission duration, establishes

the channel resource allocation, determines when to release the channel, and whether to perform a back-to-back allocation: “Management of starting and controlling the packet switched connection is handled between the S-RNC 508 and C-RNC 506.” *Id.* at ¶ 35. “The C-RNC 506 makes the resource allocation.” *Id.* at ¶ 51. “If the duration information is not transmitted to the WTRU 500, the S-RNC 508 sends a termination message to both the WTRU 500 and C-RNC 506.” *Id.* at ¶ 75. “Prior to the end of the temp-DCH duration, the NRT traffic manager at the S-RNC 508 decides whether to request a back-to-back allocation 152.” Zeira, ¶ 100.

67. Given the network-oriented control set forth by Zeira, a POSITA would not assume that the “duration” would be used to implement a WTRU-side timer that would terminate the temp-DCH upon expiration. Indeed, a POSITA would understand that there would be other purposes for such a duration. For instance, by assessing how much data it has to send relative to the duration available, the WTRU would be able to more accurately allocate buffer resources or prepare future resource requests if it computed that it would not complete the transmissions in time. Further, the duration may guide how aggressively the WTRU acts to transmit the data it has to send or affect what data gets priority for transmission. The point is this: a duration is not a timer, nor is a duration timer information or timer configuration, and just because a duration is transmitted to a WTRU does not mean that it is operating a

timer, as the WTRU would have other purposes for such a duration.

68. Furthermore, even if one decided to use the duration information to implement a mechanism in the WTRU to terminate the temp-DCH—and I disagree that this would be obvious—use of a MAC timer would still not be obvious. An alternative approach would be to set a termination time corresponding to the end of the duration and poll the system clock or check the time in event handlers that run each frame or TTI to assess if the termination time has been reached.

69. To reinforce the main point: a duration is not a timer (it is a length of time) and an end time is also not a timer. An analogy may illustrate the difference between a duration, a timer, and an end time. If a weatherman at 12pm says that the duration of a snowstorm will be 5 hours, this information does not start a timer on the part of viewers; rather, they have information that allows them to take appropriate action and also understand that the snow will cease by 5pm. Maybe they run to the gas station before the snow piles up to get gas for their snowblower. In contrast, if someone needs to wake up to go to work they would set a timer which would trigger a sequence of actions when that timer goes off. A duration is mere information while a timer triggers action. Furthermore, an end time, even if one were implemented, would not be a timer, as a timer could be reset—indeed, this is what claims 3 and 8 of the '838 Patent suggest doing.

70. Further, Zeira notes that, in the context of a back-to-back allocation, “[b]efore the end of the temp-DCH duration, the S-RNC 508 decides if an extension of the duration will be required.” Zeira at ¶ 87. This demonstrates that it is the network, specifically the S-RNC, that needs the duration to determine whether to request channel resources, not the WTRU. Zeira describes a network-driven set of algorithms and processes that dictate the network’s behavior and decision making – with little guidance on how the WTRU is to behave.

71. Zeira indicates that “The temp-DCH channel is a channel that is assigned to a user having a set duration. After the duration expires, the channel is automatically released by both the user and network.” Zeira at ¶ 6. The Petitioner and Dr. Lo assert or imply that the release of the channel necessarily requires a timer at the WTRU: “...the timer information is implemented at the WTRU because Figure 8B illustrates the activation and deactivation of the timer at the WTRU.” OnePlus’s Petition (Paper 2) at 36:1-3. This assertion is conclusory and biased by hindsight. POSITA would understand that there are several possible mechanisms that could lead to the user releasing the channel without the use of a timer at the WTRU. A first mechanism, described by Zeira, is the network commanding the WTRU to release the channel via a termination message: “If the duration information is not transmitted to the WTRU 500, the S-RNC 508 sends a termination message to

both the WTRU 500 and C-RNC 506.” *Id.* at ¶ 75. In this situation it is a timer at the network, not the WTRU, which expires indicating the need to release the temp-DCH channel.

72. A second mechanism that could be employed is the WTRU noticing that the network has stopped sending data on the downlink portion of the link. The temp-DCH channel is expected to fully utilize its bandwidth: “Since the Temp-DCH allocation is efficient (rates and durations are determined as a function of traffic volume measurements), the bandwidth would be completely utilized most of the time.” Zeira at ¶ 48.) Therefore, a lack of occupation (i.e. periods of inactivity) of the channel could be interpreted by the WTRU as an indication that it should release the channel resources. Again, this is done without the use of a timer at the WTRU. These are all mechanisms with network-driven control over the channel resources consistent with the bi-directional use case and extensive description by Zeira of how the network controls the resources and is making the decisions to autonomously release the channel resources.

73. Given these multiple alternative available mechanisms which both fit with Zeira’s network-driven approach to control and release channel resources, a POSITA would not have, without the benefit of hindsight, naturally assumed that a timer would be required at the WTRU.

74. Therefore, it is my opinion that Petitioner fails to prove by a preponderance of the evidence that claims 1 or 6 (and accordingly also all other challenged claims, which depend on either claim 1 or 6) would have been obvious based on a POSITA's understanding of Zeira.

**2. Zeira Fails to Render Obvious Claim Elements 1[d] and 6[a] For Failure to Teach or Suggest a MAC Timer Information in an RRC Message**

75. Zeira does not teach or suggest any MAC timer information as a part of an RRC message to the WTRU as claimed by independent claims 1 and 6 of the '838 Patent (and specifically, as set forth in claim elements 1[d] and 6[a]).

76. Based on my review of Zeira and applying the knowledge of a POSITA, the Petition fails to establish that Zeira would have rendered obvious these claim elements.

77. Nothing in the disclosures of Zeira suggest that an RRC message indicates MAC timer information.

78. First, the paragraphs [0401]-[0403] of Zeira which describe the sending of RRC messages specifies that those messages are to communicate the physical layer changes in the transport channel information. "The S-RNC 508 notifies the WTRU 500 of any changes in transport channel information and the new physical layer configuration, 177." ¶ 401. "In case there are no changes in the transport

channel information, send a “Physical Channel Reconfiguration” (RRC) message.” ¶ 402, and “In case the TFCS changes (changes in the beta factors) or the data rate changes (change the TFC subset), send a “Transport Channel Reconfiguration” (RRC) message.” ¶ 403. Zeira is describing the use of RRC messages for physical layer configuration and this is confirmed by the message content described in paragraphs [0404]-[0420]. There is nothing here to suggest that any time durations are part of this configuration, let alone RRC messaging to configure a MAC-layer timer.

79. Thus, Zeira does not disclose RRC messages containing any MAC timer information, and Zeira certainly does not disclose what such MAC timer information would be. Accordingly, Zeira does not render obvious claim elements 1[d] or 6[a].

80. Therefore, it is my opinion that Petitioner fails to prove by a preponderance of the evidence that claims 1 or 6 (and accordingly also all other challenged claims, which depend on either claim 1 or 6) would have been obvious based on a POSITA’s understanding of Zeira.

**3. Zeira Fails to Render Obvious Dependent Claims 5 and 10 For Failure to Teach or Suggest a MAC Timer Based on a Number of Frames**

81. Zeira does not teach or suggest a MAC timer based on a number of

frames as claimed by dependent claims 5 and 10 of the '838 Patent.

82. Based on my review of Zeira and applying the knowledge of a POSITA, the Petition fails to establish that Zeira would have rendered obvious these claim elements.

83. As I have already discussed, Zeira does not disclose the use of a MAC timer at all. But even the “duration” that may be sent to the WTRU according to Zeira is calculated based on a number of TTIs, not frames. *See Zeira at ¶ [0079]*. This was partly the basis of Dr. Lo’s argument that the time duration is for a MAC-layer timer (although I argued that TTIs are more correctly a physical layer quantity). “Therefore, Zeira’s explanation about how temp-DCH duration is calculated as a multiple of TTIs, would have further confirmed and made it obvious that the duration communicated to and tracked by the WTRU would be implemented as a MAC timer.” *See EX1003 at ¶ 111*.

84. What Zeira discloses in this portion of its disclosures is straightforward: the network calculates a “duration (transmission time period) based on the time required to transmit available data and/or data predicted to arrive” (Zeira at ¶ [0074]) and make this calculation as a TTI-based calculation (Zeira at ¶ [0079]). This duration may be sent to the WTRU. Zeira at ¶ [0074].

85. There is absolutely no suggestion by Zeira to express the duration in

terms of frames, and indeed, given a calculation in TTIs, this would be a needlessly complicated step to convert from TTIs to frames. A POSITA would have no motivation to do such a thing.

86. While frames are used for some timing purposes by the MAC layer, as Dr. Lo asserts, Zeira does not teach using a MAC timer to begin with, as I have already discussed. Accordingly, it is hindsight to say it would have been obvious to implement a MAC timer based on frames according to the teachings of Zeira.

87. Accordingly, it is my opinion that Petitioner fails to prove by a preponderance of the evidence that claims 5 or 10 would have been obvious based on a POSITA's understanding of Zeira.

**4. Zeira Fails to Render Obvious Dependent Claims 3 and 8 For Failure to Teach or Suggest the WTRU does not Deactivate the Indicated Uplink Resources Based on the Receipt of an Uplink Grant.**

88. Zeira does not teach or suggest that the WTRU does not deactivate the indicated uplink resources based on the receipt of an uplink grant as claimed by dependent claims 3 and 8 of the '838 Patent.

89. Based on my review of Zeira and applying the knowledge of a POSITA, the Petition fails to establish that Zeira would have rendered obvious these claim elements. This failure occurs for multiple reasons.

90. First, as described in the earlier section the '838 Patent involves the

establishment of an uplink data channel ('838 Patent at 1:38-41 and 2:4-6) while Zeira describes establishment of bi-directional channel with data transmissions in both the uplink and downlink directions. "After the user requests the service, typically, dedicated uplink and downlink channels are established to support the services." Zeira at ¶ 4. In the case of the '838 Patent the need for UL grants makes sense, as it is an UL transmission scenario, but for Zeira there is no concept of an "UL grant". Rather the establishment of the channel and confirmation of that channel establishment is for the temp-DCH channel as a whole without any specification as to which direction the data is flowing. Both the UL and DL are established together. This is likely why the Petitioner is unable to cite any specific references in Zeira referring to UL grants and so, instead, casts the "the RRC message" as "containing the uplink grant". OnePlus's Petition (Paper 2) at 38:15-17. The RRC message as described in Zeira at paragraphs [0401]-[0403] configures the temp-DCH physical layer parameters. The RRC message is not an Uplink grant and POSITA would not understand it to be so. There is nothing in the message that describes an Uplink grant and POSITA would not consider it to be an explicit grant as the Petitioner is suggesting.

91. Further, the Petitioner is asserting that the WTRU transmission of a "Complete" message to the S-RNC in response to the RRC message indicates "a

POSITA would have understood that Zeira teaches not deactivat[ing] the indicated uplink resources. Lo ¶ 129.” OnePlus’s Petition (Paper 2) at 39:1-7. This is wrong on a few levels. First, the “Complete” message sent by the WTRU is simply an acceptance, by the WTRU, of the configuration provided within the RRC message and that it can establish a DPCH. “After receiving a confirmation from the physical layer that the DPCH was successfully established, the WTRU RRC performs the following. Send a “Complete” message to the S-RNC 508 over then DCCH/Temp-DCH, 182.” Zeira ¶¶ 424-425. It is not related to the concept of UL grants, particularly since the RRC message does not provide an UL grant.

92. Second, the RRC message is configuring both UL and DL channel resources. This is a second reason why this is not considered an “UL grant”.

93. Third, the reception of the RRC message for the temp-DCH and subsequent establishment of the dedicated channel is an “establishment” of the temp-DCH channel meaning an allocation of resources to enable transmission over a channel. It does not refer to a “not deactivating” of uplink resources. With establishment there are no uplink resources to deactivate in the first place.

94. And in the case of back-to-back allocations, Zeira does not describe the network “granting” back-to-back allocations as suggested by the Petitioner. OnePlus’s Petition (Paper 2) at 39:8-16. First, it is the network deciding whether or

not to perform a back-to-back allocation based on downlink data it has to send to the WTRU, not the WTRU requesting UL resources. “Prior to the end of the temp-DCH duration, the NRT traffic manager at the S-RNC 508 decides whether to request a back-to-back allocation 152.” Zeira, ¶ 100. As such there is no UL request from the WTRU that requires an UL grant.

95. Second, according to Zeira a back-to-back allocation is considered a “new temp-DCH allocation” even if the WTRU remains in a cell dedicated channel state. Zeira, ¶ 100. As such, the temp-DCH resource are freshly configured. “Before the end of the temp-DCH duration, the S-RNC 508 decides if an extension of the duration will be required, 188. The extension of the duration is a new allocation at the UE side: the duration of the previously allocated temp-DCH will expire, and a new temp-DCH will be configured. This procedure is called a “back-to-back” allocation.” Zeira, ¶ 428. In other words, the channel resources are deactivated and new channel resources are activated.

96. Accordingly, it is my opinion that Petitioner fails to prove by a preponderance of the evidence that claims 3 or 8 would have been obvious based on a POSITA’s understanding of Zeira.

**C. Ground 2: The Teachings of Yi Do Not Cure the Deficiencies of Zeira**

97. In my opinion, Petitioner has failed to provide a showing that any of

claims 1-10 are obvious based on Zeira in view of Yi by a preponderance of the evidence, as I will explain below.

98. Yi concerns a multimedia broadcast/multicast service (MBMS). *See* EX1006 at ¶ 15. At paragraphs 37-39, Yi discloses that:

A method for releasing the RB by a mobile terminal according to the present invention comprises, a radio system providing data units (packets) of a particular MBMS service via a particular point-to-multipoint RB to the mobile terminal, the mobile terminal establishes the point-to-multipoint RB and receives the data units therethrough, the mobile terminal triggers a timer when a data unit of the particular MBMS service is received, and the mobile terminal releases the established point-to-multipoint RB if another data unit of the particular MBMS service is not received by the time the timer has expired.

Preferably, when another data unit is received before the timer has expired, the mobile terminal initializes and re-triggers the timer.

Preferably, a particular entity provided in the mobile terminal can operate a timer for the data unit of a particular MBMS service. This entity can be located in the second layer (L2) of the radio protocol, and may be a MAC entity, a RLC entity, or a PDCP entity. If this entity in the mobile terminal operates a timer for a single data unit of the broadcast or multicast service, and then does not receive another data of the broadcast or multicast service before the timer expires, the entity in the mobile terminal reports the timer expiration to the RRC in the mobile terminal. The RRC in the mobile terminal, upon receiving the timer expiration report, performs the release of the point-to-multipoint RB established for the broadcast or multicast service.

EX1006 at ¶¶ 37-39.

99. Thus, the context of the teachings of Yi pointed to by Petitioner show that Yi is disclosing an inactivity timer used for a downlink, and more specifically, the use of a predetermined timer continually reset by incoming data that tracks the last reception of data, and releases the MBMS when the timer expires, which is of course not a timer set through RRC messaging to control the usage of an uplink communication channel. The focus on downlink, and not just downlink but downlink for a broadcast service, alone would make the disclosures of Yi inapplicable to the problems sought to be solved by the inventors of the '838 Patent.

100. Yi of course illustrates what a timer is—something that can, for example, be triggered, set, and expire—versus just a duration.

101. The inactivity timer of Yi would not be obvious to combine with the disclosures of Zeira because inactivity (such as addressed in the teachings of Yi) has nothing to do with the pre-calculated duration that Zeira discloses as being transmitted. Yi does not, for example, disclose using a timer to mark or implement a duration transmitted to the WTRU from the network in order to maintain a temp-DCH. The teachings are simply non-analogous and would not be obvious to combine.

102. I have reviewed the prosecution history of the '838 Patent, and the timer

of Yi is analogous to the inactivity timer of U.S. Patent Application Pub. No. 2008/0117891 (“Damnjanovic”) (EX2002) already considered by the examiner. *See* EX1002 at 275, 476. According to Damnjanovic, a WTRU (or UE) may send data based on a resource assignment, set a timer to a predetermined time period after sending the data, send more data if available and if the timer has not expired, reset the timer after sending more data, and relinquish the resource assignment when the timer expires. *See* EX2002 at ¶ [0064]. The examiner recognized as persuasive the argument that “Damnjanovic is silent regarding any teaching or suggestion regarding receiving a RRC message indicating timer information as recited in the pending independent claims.” *See* EX1002 at 275, 476. Damnjanovic too illustrates what a timer is.

103. Therefore, it is my opinion that Petitioner fails to prove by a preponderance of the evidence that any of claims 1-10 would have been obvious based on a POSITA’s understanding of Zeira in view of Yi.

## **VIII. CONCLUSION**

104. For at least the foregoing reasons, it is my opinion that the Petitioner and Dr. Lo have failed to show by a preponderance of the evidence that any of the Challenged Claims are unpatentable.

105. In addition to the opinions and evidence expressed herein, I reserve the

right to rebut any arguments made or evidence presented in response to this report. I also reserve the right to supplement this report based on further investigation or analysis.

106. I hereby declare under the penalty of perjury under the laws of the United States of America that the opinions set forth herein are true and accurate to the best of my knowledge, information, and belief.

Dated: March 6, 2026



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Jason Duggan

# **Appendix A**

# Jason Duggan

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## Education

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1996 - 1994    M.Sc. Electrical Engineering, Queen's University

Thesis: "Adaptive Beamforming with a Focal-Fed Offset Parabolic Reflector Antenna"

1994 - 1990    B.Sc. Engineering Physics (Electrical Engineering Option), Queen's University

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## Skills and Expertise

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### Wireless Expertise

LTE and 5G NR (FDD and TDD) – (7 U.S. patents granted)

4G EPC and 5GC core networks

WiFi

Bluetooth

UMTS and other CDMA-based Systems

OFDM and MIMO technologies

Wireless receiver design (statistical estimation)

Wireless propagation

RF

### Implementation

DSP and highly optimized embedded design (assembly)

C, C++, Ruby, Python, Swift

Matlab (wireless link level and system level simulation)

VHDL

### Soft Skill Strengths

Leadership and technical direction

Communication including working effectively on multi-site teams

Presentation skills

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## Work Experience

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### **2015 – Present      Telecommunications Technical Consultant**

- Technical consulting to Claude Royer Consulting on IP related matters
- Numerous projects evaluating patents and acting as a technical consultant in patent cases related to telecommunications.
- Testing of many products to assess evidence of use for LTE, 5G, WiFi6, and BT systems.
- Simulation of 4G and 5G systems in Matlab to prove validity of alternatives or to assess the impact of potential infringement.
- CDMA2000 and LTE L1/L3 stack development for Octasic.

### **2008 – 2014      Blackberry – LTE L1 Technical and Team Lead**

#### **Design prime for delivering LTE-TDD**

- Led a team of 10-15 developers to deliver TDD.

#### **Algorithm prime for LTE L1 algorithms**

- Led a small team to deliver several key L1 algorithms: channel estimation, cell search, RSSI scan, AFC, time tracking, RSRP/RSRQ estimation. Responsible for the whole design cycle: requirements definition, simulation, algorithm design, software implementation and optimization, support.

#### **L1 Systems design prime**

- Specified the system design for the L1 tracking loops and their operation across the wide variety of expected scenarios with the goal of jointly optimizing the power consumption and link performance.

#### **LTE Simulator design prime**

- Led the development of a full LTE simulator used for algorithm development, performance evaluation and to develop a deep understanding of the LTE physical layer.

#### **Communications System Design Team Lead**

- Organizational responsibility for a small team.
- Key technical advisor to the director of L1 LTE software.

#### **IP Generation – 8 Implementation-related patents filed (4 granted)**

- Code Block Reordering Prior to FEC Decoding Based on Predicted Code Block Reliability.
- FEC Decoding Avoidance Based on Predicted Code Block Reliability.
- Reduced complexity MLD MIMO decoder.
- Transmission Index Dependent Receiver Processing.
- Measurement Dependent Receiver Processing.
- Method and Systems of Two-Dimensional Channel Estimation for LTE Downlink Data Demodulation.
- Differential RSSI Frequency Scan for E-UTRA.

- Adaptive measurement interval based RSSI scan for E-UTRA.

## **2000 – 2008            Nortel Networks – Designer, Technical Lead, Systems Prime**

### **40G and 100G Optical Transport System Design Prime (2007-2008)**

- System co-prime for 100G product and system prime for several 40G product features.
- Customer trial support prime.
- Presented the 40G and 100G technology to over 50 customers.

### **Leadership Edge Development Program (2007)**

- Participant in a 1 year program to develop up-and-coming leaders. The program offered a wide-range of hands-on development and mentoring experiences.

### **Patent Review Board Technical Reviewer**

- Reviewed patents related to the wireless business and gave technical recommendations.

### **Member of Technical staff in Wireless Advanced Technology Group (2000 – 2007)**

- Wi-Max Collaborative MIMO Prototype Technical Lead, Architect and overall responsibility for the receiver (TI-based DSP design).
- OFDM / 4x4 MIMO Prototype Technical Lead and FPGA designer.
- CTIA Demonstrations
- 3GPP OFDM Study Item / Vodafone collaboration designer (simulator development)
- UMTS / CDMA Converged BTS Modem Prime (architecture, study prime)
- UMTS TDD Feasibility Study Designer (algorithm and simulation work)
- MIMO Prototype DSP Designer (TI-based DSPs)
- 1xRTT Alpha Designer and post-delivery technical support (DSP design)
- 6 patents filed:
  - Early Termination Controller for Iterative FEC Decoders.
  - Initial Ranging Detection for OFDMA Systems.
  - Channel Quality Indicator (CQI) for OFDM in Frequency Selective Channels.
  - High-Performance Peak Detection for Wideband Wireless Communications Channels.
  - Low Complexity Combining Scheme for Interference Cancellation in Wideband Wireless Channels.
  - Inter-stage Combining in Parallel Interference Cancellation.

## **1997-1999            Communications Research Center – Designer**

### **MILTON Wireless System Designer (RF sub-systems, antennas, algorithms, systems)**