

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,

Petitioner,

v.

INTELLECTUAL VENTURES II LLC,

Patent Owner.

Case No. IPR2025-00221
U.S. Patent No. 11,664,889

PATENT OWNER'S PRELIMINARY RESPONSE

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PATENT OWNER'S EXHIBIT LIST

EX2001	Petitioner's Answer to Complaint and Counterclaim, dated June 20, 2024, in <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2002	Docket from District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2003	Scheduling Order from District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2004	Defendant's Second Supplemental Preliminary Invalidity Contentions, dated January 9, 2025, in District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2005	EP 1681 780 (Dateki)
EX2006	File History of U.S. Patent Appl. 11/646,692
EX2007	File History of U.S. Patent Appl. 13/176,298
EX2008	File History of U.S. Patent Appl. 14/458,693
EX2009	File History of U.S. Patent Appl. 16/682,854
EX2010	File History of U.S. Patent Appl. 17/339,550
EX2011	File History of U.S. Patent Appl. 17/583,369
EX2012	File History of U.S. Patent Appl. 17/870,425
EX2013	Declaration of Dr. Gary Lomp
EX2014	Resume of Dr. Gary Lomp
EX2015	TR 25.912 Feasibility Study for Evolved UTRA and UTRAN - Sept. 2006

I. INTRODUCTION

The Petition challenges claims 1-8 (“Challenged Claims”) of U.S. Patent No. 11,664,889 (“ ‘889 Patent,” EX1001) under three grounds of unpatentability. The Board should deny institution on the merits for at least two reasons.

First, independent claims 1 and 5 recite a UE that transmits a signal based on information extracted from a “control message” having “power control bits for a plurality of UEs,” (ii) where “the control message” shares a time slot with a “downlink shared channel.” The Petition maps “the control message” with power control bits “for a plurality of UEs” to information transmitted on Dateki’s F-DPCH channel, and the “downlink shared channel” to Dateki’s downlink data traffic channel. This mapping fails to meet the claimed combination because whenever the F-DPCH channel and the downlink data traffic channel share a time slot, power control information on the F-DPCH (mapped to “the control message”) is not used for the UE’s transmission power, as required by the Challenged Claims. Rather, in all cases where the F-DPCH channel and the downlink data traffic channel share a time slot, the power control information on the HS-SCCH -- as opposed to the F-DPCH -- is used to control the UE’s transmission power. The Petition does not contend (nor could it) that the power control information on the HS-SCCH maps to the claimed “the control message” because each frame on the HS-SCCH has power

control information for only a single UE and thus lacks the requirement that “the control message” have power control bits for “a plurality of UEs,” as claimed.

Second, the Petition fails to demonstrate that Dateki discloses “a control message ... wherein the control message has power control bits for a plurality of UEs,” as recited in the Challenged Claims. This claim language requires that there be one control message (singular) that has power control bits for a plurality of UEs. This claim limitation is not met by two control messages, where one message had power control bits for only one UE, and the second had power control bits for only one other UE. The Petition fails to explain how plural messages on Dateki’s F-DPCH that are separately addressed to different UEs constitute a single message with power control bits for a plurality of UEs, as claimed.

II. SPECIFICATION OF THE ‘889 PATENT

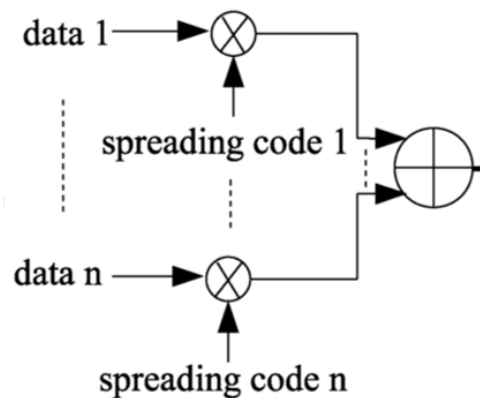
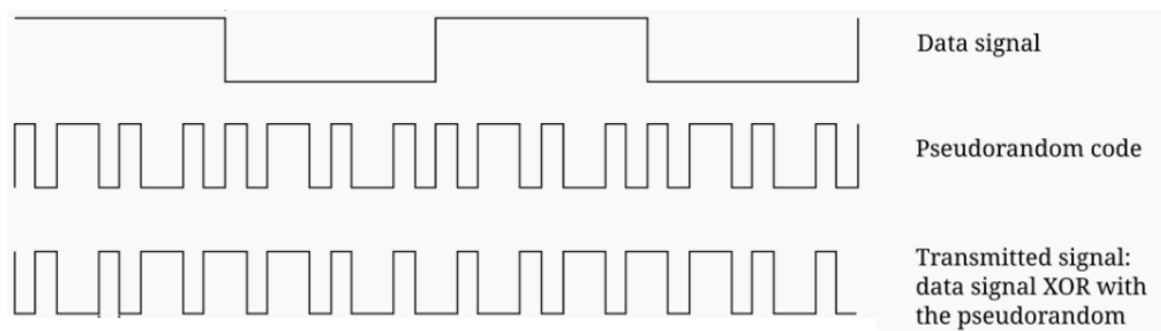
A. Background of the ‘889 Patent

The ’889 Patent pertains to uplink power control in time division-code division multiple access (TD-CDMA) systems, including those operating in time division duplex (TDD) mode. TD-CDMA systems combine time and code multiplexing to enable multiple user transmissions within the same frequency spectrum. The ’889 Patent describes an improved technique for uplink power control in such systems, particularly in scenarios where channel reciprocity—the condition that enables a mobile device to infer uplink channel conditions from downlink

observations—cannot be guaranteed. Departing from conventional approaches that required the establishment of a dedicated feedback channel, the '889 Patent introduces a shared, closed-loop feedback mechanism in which mobile devices transmit uplink beacon signals (UL_Beacons), and the base station responds with power control information via a shared Physical Layer Control Channel (PLCCH) that shares a time slot with a downlink shared channel. EX2013, ¶24.

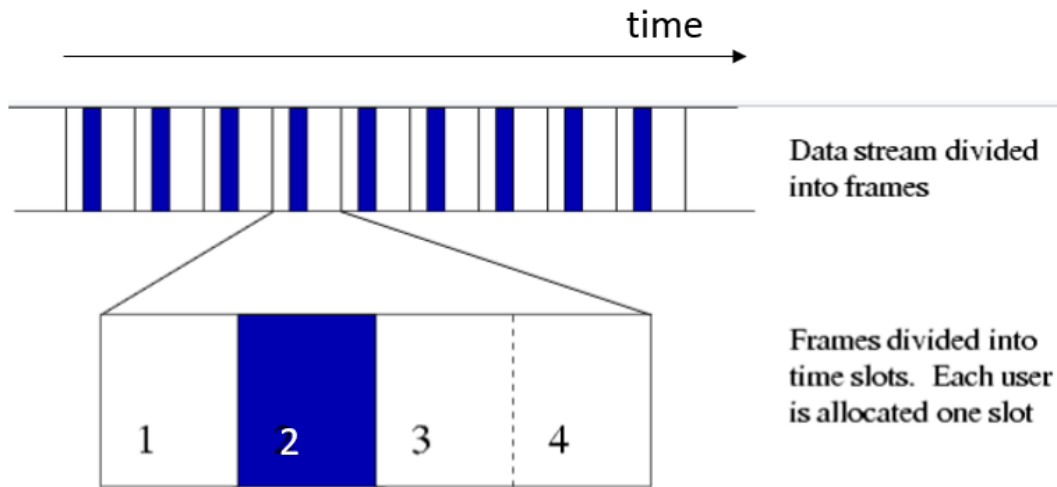
1. Operation Of CDMA, TDMA and TD-CDMA Systems

In code division multiple access (CDMA) systems, spreading codes enable individual users to share the same frequency spectrum without interference. In one example of a CDMA system, each user is assigned a unique spreading code that spreads the original data signal across a much wider bandwidth by combining the original data with a spreading code using an XOR function or other modulation techniques. The receiver uses the same spreading code to extract the original data. Below are simplified diagrams illustrating the operation of an exemplary CDMA system. The top diagram depicts the formation of a signal (transmitted signal) by combining an original data signal with a spreading code (pseudorandom code) using an XOR function. The bottom diagram illustrates the summation and simultaneous transmission of two such transmitted signals (each formed using a different spreading code) over a communication channel. EX2013, ¶25.



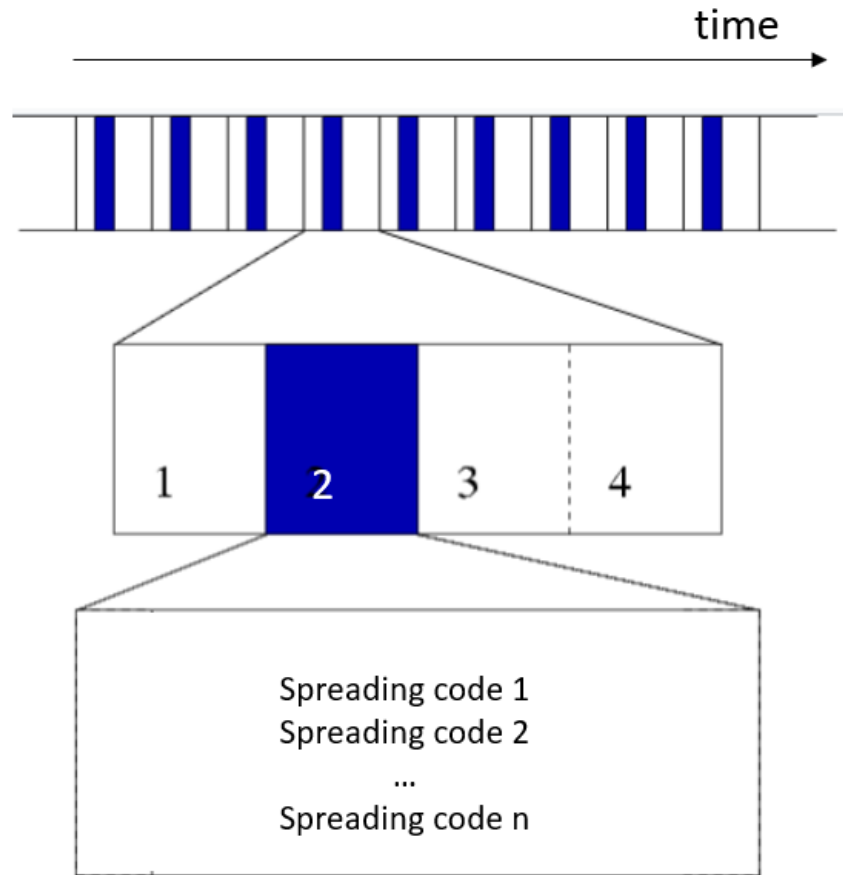
EX2013, ¶25.

Time division multiple access (TDMA) systems operate by dividing a communication channel into distinct times that allow multiple users to share the same frequency. In one example of a TDMA system, each user is assigned a unique time slot during which they can transmit or receive data. Below is a simplified diagram illustrating the operation of an exemplary TDMA system. The communication channel is divided into frames in the time domain. Each frame is further divided in the time domain into time slots, where each user is allocated one slot. EX2013, ¶26.



EX2013, ¶26.

Time division - code division multiple access (TD-CDMA) systems represent a hybrid technology that combines aspects of TDMA and CDMA. In a TD-CDMA system, the communication channel is divided into timeslots, and within each timeslot, spreading codes are used to distinguish between messages intended for different users. Below is a simplified diagram illustrating the operation of an exemplary TD-CDMA system. The communication channel is divided into frames in the time domain, and each frame is further divided in the time domain into time slots. Within each time slot, different spreading codes are used to simultaneously transmit information to a specific user or group of users. EX2013, ¶27.



EX2013, ¶27.

2. Power Control In TD-CDMA Systems

Power control is critical in TD-CDMA systems to maintain communication quality, minimize interference, and optimize network capacity. Since TD-CDMA systems allow messages for multiple users to be transmitted simultaneously over the same frequency band, effective power control is essential to ensure that signals remain distinguishable and interference is minimized. TD-CDMA systems are highly susceptible to the near-far effect — a situation where signals from nearby users overpower those from distant users, potentially drowning them out. Power

control techniques are needed to ensure that users transmitting too strongly reduce their power to avoid overwhelming others, and that users far from the base station increase their power to ensure their signal is detectable. EX2013, ¶28.

In “open-loop” power control, a mobile station increases or decreases its transmission power based on the received signal strength at the mobile station. In “closed-loop” power control, the base station monitors the quality of the signal received from the mobile station, and based on this information, the base station sends feedback information to the mobile station, which the mobile station uses to increase or decrease its transmission power. EX2013, ¶29.

3. Use Of Channel Reciprocity For Open-Loop Power Control In TD-CDMA Systems

The Background of the ‘889 Patent is set in the context of time division-code division multiple access (TD-CDMA) systems configured for time division duplex (TDD) operation, i.e., where the same frequency is simultaneously used for uplink and downlink communications. The ‘889 Patent begins by discussing the use of channel reciprocity to provide “open-loop” power control in such systems. EX2013, ¶30. As discussed in the ‘889 Patent, when channel reciprocity exists, a mobile station can derive information for implementing power control on the uplink channel conditions from downlink channel conditions:

Time division-code division multiple access (TD-CDMA) is an air interface technology that combines the benefits of the three

elemental concepts in a universal mobile telecommunication system (UMTS): time division multiple access (TDMA); code division multiple access (CDMA); and time division duplex (TDD). TDD, in particular, uses the same radio channel for both uplink and downlink communications, ... One of the benefits obtained by operating both links on the same frequency is the ability to exploit channel reciprocity.

Channel reciprocity gives equipment the ability to derive information about uplink channel conditions from downlink channel conditions based upon signals received by the user equipment (UE). Pathloss is one example of channel information that can be obtained from channel reciprocity. Knowledge of the uplink pathloss enables open-loop power control to be employed for uplink transmissions. For example, uplink power control is important for the operation of the CDMA element of TD-CDMA as it counteracts the near-far effect that would otherwise be encountered if all UEs transmitted at a fixed power regardless of the uplink pathloss. ... EX1001, 1:27-49.

After explaining the concept of channel reciprocity, the '889 Patent emphasized that a UE that “can derive information needed to access uplink channels from the downlink transmissions (beacon signals) has a significant advantage over a terminal that relies on the (lengthy) configuration of a dedicated channel in order to establish a feedback channel.” *Id.*, 1:57-61. Thus, the '889 Patent disparaged closed-loop power control techniques that required a dedicated feedback channel, characterizing such techniques as being inferior to open-loop power control techniques that derive information needed for uplink channels from downlink transmissions. EX2013, ¶31.

4. Channel Reciprocity Cannot Always Be Guaranteed

The '889 Patent next explained that there are situations where “channel reciprocity cannot always be guaranteed.” *Id.*, 1:62-63. For example, there are situations where “the correlation between uplink and downlink channels is lost because the channels are transported on carrier frequencies that are separated in frequency by an amount that is greater than the coherence bandwidth of the channel.” *Id.*, 1:67-2:3. The Background of the '889 Patent concluded by identifying the need for a substitute for channel reciprocity when “the TD-CDMA air interface is to be used in applications where the correlation between the uplink and downlink path loss is not guaranteed.” *Id.*, 2:17-20; *see also*, 2:24-28 (“known conventional methods do not deal directly with the evolution or adaptation of an air interface that uses channel reciprocity to deliver key features and advantages where channel reciprocity is not guaranteed.”) EX2013, ¶32.

B. Brief Summary Of The Invention

The Brief Summary of the Invention stated in part:

... The adaptation provided in embodiments of the invention introduces a new technique for uplink channel control that uses a feedback scheme as a substitute for the absence of channel reciprocity, with minimal impact on the ability of the air interface to support uplink shared channels.

Embodiments of the present invention enable active feedback control between a base station and user equipment (UE). ... Embodiments of the invention allow a terminal to transmit the uplink physical channel control signal (UL_Beacon) independently from the

uplink physical channel. Therefore, the implementation of closed loop feedback may operate in the absence of an uplink physical channel. In one embodiment, a UE allocates a time slot for a beacon signal separated from the time slots for data in a frame. A second time slot is allocated within the frame for the base station to transmit a control signal in response to the beacon signal. The control signal instructs the UE to adjust a transmission parameter.

A UL_Beacon signal may be combined with a physical layer common control channel (PLCCH) to form a feedback system. A dedicated timeslot groups all of the UL_Beacon signals from multiple UEs in a specific uplink timeslot. B ... The PLCCH carries feedback information to the UEs that are transmitting UL_Beacon signals. The PLCCH can share a timeslot with other physical channels by exploiting the CDMA aspect of the system. *Id.*, 2:29-64 (emphasis added).

Thus, as described in the Brief Summary, mobile stations (or UEs) transmit UL_Beacon signals to the base station. The base station then uses a physical layer common control channel (or PLCCH) to carry feedback information from the base station to the UEs (i.e., on the downlink). In contrast to the dedicated channel disparaged in the Background, the physical layer common control channel (or PLCCH) corresponds to a time slot used to transmit feedback information to multiple mobile stations. The Brief Summary also explains that the PLCCH can share a timeslot with other physical channels by exploiting the CDMA aspect of the system, meaning that the PLCCH and other physical channels could be transmitted at the same time using different spreading codes. EX2013, ¶34.

C. Detailed Description of the '889 Patent

The '889 Patent describes “the combination of an uplink physical channel control signal with a downlink feedback channel” in order “to keep the terminal informed of the condition of the uplink channel.” *Id.*, 4:56-59. The '889 Patent refers to the uplink physical control signal as an “Uplink Beacon” (UL_Beacon), and discloses the use of a physical layer common control channel (or PLCCH) to carry the feedback information from the base station to the UEs on the downlink. *Id.*, 2:52-62 and 4:59-61. In one embodiment, “the physical channel control signal is separate from the uplink (shared) physical channel. Thus, terminals are able to transmit an UL_Beacon independently of their access to the uplink shared channel.” *Id.*, 5:5-8. This embodiment implements “a closed loop control system, in which the base station detects the received power and/or other channel information from the UL_Beacon, and sends controlling commands back to each terminal to keep the terminal informed of the channel conditions observed at the base station.” *Id.*, 5:8-14. EX2013, ¶35.

In contrast to the dedicated downlink channel for closed-loop power control that the '889 Patent disparaged in the Background, the '889 Patent disclosed the use of a shared downlink channel (such as the PLCCH mentioned above) for sending power control commands to the mobile stations. EX2013, ¶36. As explained in the '889 Patent:

... The base station may send power control commands on a shared downlink channel to each terminal based on the power received from the UL_Beacon signal. Each power control command may, for example, indicate whether terminal power should be increased or decreased by a predetermined amount. This downlink channel is referred to as the “Physical Layer Control Channel” (PLCCH). The capacity of the PLCCH may be matched to the number of bits required in the feedback field and the number of UL_Beacon signals that can be simultaneously supported. That is, each UL_Beacon may correspond to one bit of the PLCCH. All terminals transmitting UL_Beacon signals may receive this channel and extract the relevant feedback field. *Id.*, 5:17-29.

The above-described PLCCH corresponds to multiple UEs and includes multiple bits, where each bit in the message corresponds to a terminal transmitting a UL_Beacon. EX1001, 5:17-29; EX2013, ¶37.

The '889 Patent also discloses that the PLCCH can share a timeslot with another downlink shared channel. In this arrangement, a single timeslot is shared by two shared channels, e.g., the PLCCH (which is itself a shared channel) shares the same timeslot with another shared channel, and information in the PLCCH is used by the mobile station to effectuate power control. EX2013, ¶38. This arrangement is shown in Figure 2 of the '889 Patent, reproduced below with annotations:

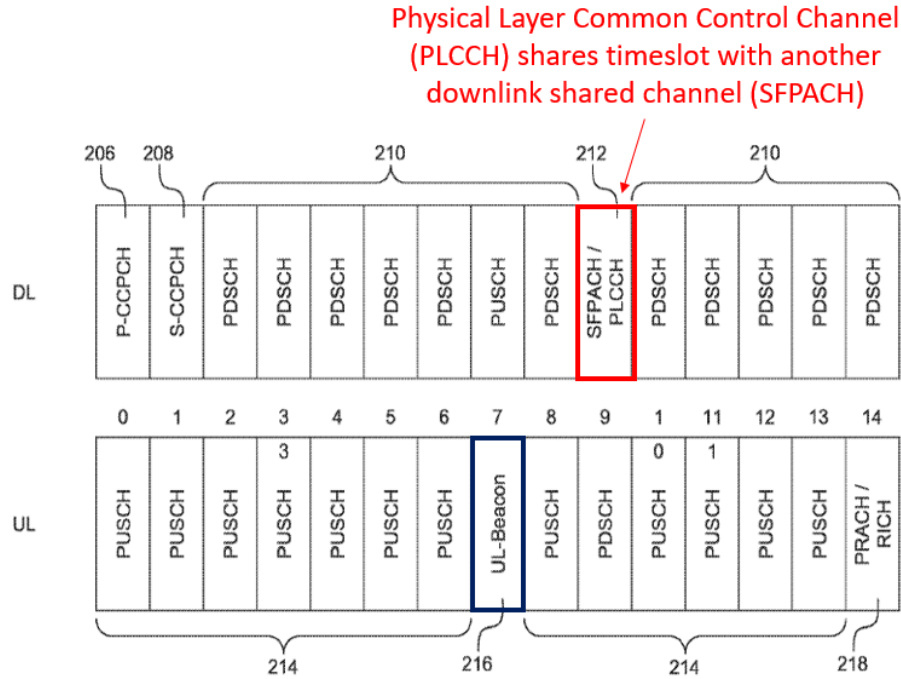


FIG. 2

“FIG. 2 illustrates an example of a timeslot arrangement supporting the UL_Beacon [blue box] and its corresponding PLCCH [red box] within a TD-CDMA frame structure.” *Id.*, 6:5-7. Figure 2 depicts downlink and uplink frames of a TD-CDMA system operating in a Frequency Division Duplex (FDD) mode, where a downlink frame (labelled “DL” above) and an uplink frame (labelled “UL” above) are transmitted at the same time on different frequencies, such that the base station and mobile station transmit and receive at the same time. *Id.*, 4:25-31 and 6:8. In this arrangement, “[t]he PLCCH 212 shares a timeslot with another downlink shared channel” which “is possible since normal downlink physical channels are used to transmit the PLCCH.” *Id.*, 6:8-11 (emphasis added). In Figure 2, the normal

downlink physical channels include “normal traffic carrying timeslots 210.” *Id.*, 6:11-13. “The uplink frame comprises a UL_Beacon control timeslot 216, an access control timeslot 218, and normal traffic carrying timeslots 214.” *Id.*, 6:11-13; EX2013, ¶39.

In sum, the '889 Patent presents an improved power control scheme that overcomes the limitations of traditional approaches reliant on dedicated feedback channels.

III. PROSECUTION HISTORY OF THE '889 PATENT

A. The Disclosure Of Dateki -- The Sole Reference Relied On To Challenge The Independent Claims Of The '889 Patent -- Was Presented To And Considered By The Examiner Over A Dozen Times

The European Counterpart (EP 1 681 780)(EX2005) to Dateki (EX1005) was the primary reference (D1) applied against the claims in the PCT counterpart (PCT/EP2007/064483) of the disclosure corresponding to the '889 Patent:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2007/064483

- 1 Reference is made to the following documents, which are cited in the International Search Report:

D1: EP-A-1 681 780 (FUJITSU LTD [JP]) 19 July 2006 (2006-07-19)

D2: US 2006/093026 A1 (MONTJOJO JUAN [US] ET AL) 4 May 2006 (2006-05-04)

D3: DE 102 01 270 A1 (SAMSUNG ELECTRONICS CO LTD [KR]) 8 August 2002 (2002-08-08)

- 2.2 Accordingly all features of independent Claim 1 are known from D1 and its claimed subject-matter is thus not novel within the meaning of Article 33(2) PCT.

EX2006, at 297-298. In response to the Written Opinion, the Applicant presented the Office with a copy of EP 1 681 780 (Dateki), and copies of the International Search Report and Written Opinion citing the same in U.S. Appl. 11/646,692 -- the first application in the chain of priority of the '889 Patent. EX2006, at 269-285, 288-293, 294-302, 305-306, 309-311, and 148. Examiner Abselson (a Primary Examiner) signed the IDS indicating that he had considered these submissions. EX2006, at 132.

The Applicant again disclosed all of the same information in Application No. 13/176,298 -- the next application in the priority chain. EX2007, 86-89 (Foreign Patent Document Cite No. 4 and NPL Cite No. 9); 236-252, 403-405. Examiner Abselson again signed the IDS indicating that he had considered these submissions. EX2007, at 1851-1852 and 1857-1860.

Also, during prosecution of Application No. 13/176,298, the Applicant brought to the attention of Examiner Abelson that the Japanese Counterpart of Dateki (JP 2006-1973318) had been cited against Applicant's Japanese counterpart. EX2007, at 1943-1959 and 1911-1912. At the same time, the Applicant indicated that the U.S. version of Dateki (USP 8072916, EX1005) corresponded to the Japanese counterpart of Dateki raised by the Japanese Patent Office:

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	6611509	BA	2003-08-26	Hayashi et al.	* Corresponds to JP 11-261544
	2	8072916	BB	2011-12-06	Dateki	* Corresponds to JP 2006-197318

* * *

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² i	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	11-261544	JP		1999-09-24	Hayashi et al.		☐
	2	2006-197318	JP		2011-12-06	Dateki		☐

* * *

NON-PATENT LITERATURE DOCUMENTS					Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.			T ⁵
	1	OFFICE ACTION, Japanese Patent Application No. 2009-543459, dated December 18, 2012.			☐

EX2007, at 1911-1912. Examiner Abselson again signed the IDS indicating that he had considered these submissions. EX2007, at 1851-1852.

The Applicant again disclosed multiple versions of Dateki in Application No. 14/458,693 -- the next application in the priority chain. EX2008, 578-583 (U.S. Patent Cite No. 11; Foreign Patent Cite No. 4; and Non-Patent Literature Cite No. 12). Examiner Abselson signed the Information Disclosure Statements indicating that he had considered these submissions. EX2008, at 526-532 and 552-558.

The Applicant again disclosed multiple versions of Dateki in Application No. 16/682,854 -- the next application in the priority chain. EX2009, at 198-207 (U.S. Patent Cite No. 11; Foreign Patent Cite No. 4; and Non-Patent Literature Cite No. 12). Examiner Abselson again signed the IDS indicating that he had considered these submissions. EX2009, at 186-195.

The Applicant again disclosed multiple versions of Dateki in Application No. 17/339,550 -- the next application in the priority chain. EX2010, at 53-62 (U.S. Patent Cite No. 11; Foreign Patent Cite No. 4; and Non-Patent Literature Cite No. 12). Examiner Abselson again signed the IDS indicating that he had considered these submissions. EX2010, at 24-33.

The Applicant again disclosed multiple versions of Dateki in Application No. 17/583,369 -- the next application in the priority chain. EX2011, at 34-39. Examiner Abselson again initialed the pages of the IDS indicating that he had considered these submissions. EX2011, at 27-32.

The Applicant again disclosed multiple versions of Dateki in Application No. 17/870,425 (the last application in the chain), which matured into the '889 Patent. EX2012, 47-52. Examiner Abselson again initialed the pages of the IDS indicating that he had considered these submissions. EX2012, at 26-31.

Thus, Examiner Abelson was specifically directed to the pertinence of Dateki's disclosure in the Search Report and Written Opinion issued by the PCT

Authority, and in an Office Action issued by the Japanese Patent Office. On at least seven separate occasions, Examiner Abselson indicated that he considered these materials. Moreover, over the course of 13 years (from 2009-2022), the Applicant directed Examiner Abselson to Dateki at least 14 times by citing either the U.S., European, or Japanese version of Dateki in Information Disclosure Statements. In every case, Examiner Abselson indicated that he considered the submissions.

B. The Written Opinion Of The PCT Authority Specifically Directed The Examiner To Dateki, And The Petition Maps Dateki In A Manner Similiar To The Mapping Of The PCT Authority

The European counterpart of Dateki -- referred to as “D1” below -- was the primary basis for the rejection of the claims in the PCT counterpart of the disclosure corresponding to the ‘889 Patent. Just like the arguments made in the Petition, the PCT Authority based its rejection on Figure 6 of Dateki, including the transmission power control (TPC) information in a time slot on Dateki’s F-DPCH channel, as shown in Figure 6:

Document D1, which is considered to represent the closest state of the art, discloses a method for enabling active control feedback between a base station and mobile station in a wireless communications network (see D1, paragraphs 20, 23), the method comprising:

- allocating a first time slot within a frame for a mobile station to transmit a beacon signal to the base station, wherein the beacon signal is separate from data signals in the frame (see D1, paragraphs 10, 11, 50, 55, 56, figure 6, the periodically sent uplink pilot transmission at the period assigned to TPC in the F-DPCH, in a slot preceding the slot assigned to the F-DPCH, the pilot being sent without accompanying data, the frame length being 10 ms, a subframe comprising 3 slots);

- allocating a second time slot within the frame for the base station to transmit a control signal in response to the beacon signal, the control signal for providing a basis upon which the mobile station adjusts a transmission parameter (see D1, paragraphs 47, 52, 56, figure 6, the slots in the F-DPCH carrying the TPC bits used for uplink power control) ... EX2006, at 297 (emphasis added).

Similar to the analysis of the PCT Authority, the Petition maps “a control message [transmitted] over a physical control channel in a first time slot,” as recited in claims 1 and 5 of the ‘889 Patent, to the transmission of TPC bits on Dateki’s F-DPCH channel in Figure 6 of the reference. From the Petition:

[1.2] wherein: the receiver and the processor are configured to receive a control message over a physical control channel in a first time slot,

Dateki discloses or at least renders obvious limitation [1.2]. Ex.1003, ¶¶79-85.

Dateki discloses the UE receiving control information over a “fractional dedicated **physical control channel** (F-DPCH),” which is an example of the recited *physical control channel* in [1.2]. Ex.1005, 4:35-40 (describing F-DPCH carrying TPC bits for plural users), 12:13-15 (same); Ex.1003, ¶79.

Further, Dateki discloses transmitting a power *control message* over the F-DPCH: “[t]he F-DPCH corresponds to a channel that is capable of transmitting a slot including plural TPC [transmit power control] bits addressed to differing mobile stations.” Ex.1005, 12:13-15. ...

As explained above, the TPC commands carried in the F-DPCH (control channel) comprise a *control message*, because the TPC commands are communicated together in a F-DPCH, and the TPC commands are used to maintain the communication link. Ex.1003, ¶81. Referring to FIG. 6 below, Dateki illustrates a plurality of time slots and associated channels and transmissions. Pet., 30-32.

Moreover, similar to the analysis of the PCT Authority, the Petition maps the requirements that the UE “extract power control information ... from the first message” and “transmit a signal ... based on the extracted control information” as recited in claims 1 and 5 of the ‘889 Patent to information extracted from the TPC commands sent on the F-DPCH channel in Figure 6 of Dateki. From the Petition:

[1.5] the processor is further configured to extract power control information for the first UE from the control message, and

Dateki discloses limitation [1.5]. Ex.1003, ¶¶98-101.

As discussed in association with [1.2] and shown in Fig. 6, Dateki’s UE receives a TPCC (transmit power control command). Ex.1005, 11:6-11, 12:13-16, FIG. 6. Dateki explains that the TPCC extracting unit 37 of the mobile station (part of *the processor*) extracts *power control information* from the TPCC ... Pet., 38.

* * *

[1.6] the transmitter and the processor are configured to transmit a signal over a physical control channel to a base station in a second time slot at a transmission power level based on the extracted power control information.

Dateki discloses or renders obvious limitation [1.6]. Ex.1003, ¶¶102-111.

First, Dateki discloses that the UE transmits an “ACK/NACK signal” and uplink pilot signals (also referred to as pilot “symbols”) to the base station. See Ex.1005, 12:4-10, 10:60-62. Each of these signals, shown in FIG. 6 of Dateki, ...

FIG. 6, annotated below, illustrates adjusting the power level of ACK/NACK transmissions and pilot signals based on the TPCC information. Pet., 39-41.

Thus, the PCT Authority attempted to map Figure 6 of Dateki to the disclosure of the '889 Patent. Examiner Abelson was directed to this analysis and considered it on multiple occasions, correctly finding it lacking.

C. The '425 Application - The Final Application In The Priority Chain

The '889 Patent is based on U.S. Patent Appl. No. 17/870,425 (the '425 Application). As originally filed, the '425 Application included 20 claims. Original claim 1 recited:

1. A first user equipment (UE) comprising:
a transmitter;
a receiver; and
a processor, operatively coupled to the transmitter and the receiver,
wherein:
the receiver and the processor are configured to receive a control message over a physical control channel in a first time slot, wherein the control message has power control bits for a plurality of UEs, wherein the plurality of UEs include the first UE,
the processor is further configured to extract power control information for the first UE from the control message, and the transmitter and the processor are configured to transmit a signal over a physical control channel to a base station in a second time slot at a transmission power level based on the extracted power control information. EX1002, 28.

Original claim 1 was supported by the embodiments of the '889 Patent discussed above where a PLCCH (“a control message”) with power control bits for a plurality of UEs (“the control message has power control bits for a plurality of UEs”) is used by a UE to recover the control message and extract the power control

bit relevant to such UE (the processor in the UE “is further configured to extract power control information for the first UE from the control message.”) Based on the extracted power bits, the UE transmits “a signal over a physical control channel to a base station in a second time slot at a transmission power level based on the extracted power control information.” In the disclosed embodiment discussed above, this signal transmitted by the UE over the physical control channel to the base station corresponds to the UL_Beacon.

In the first Office Action, the Examiner rejected claim 1 as obvious over Anderson and Liang. *See*, EX1002, 58-60. However, the first Office Action indicated that dependent claim 2 would be allowable if re-written in independent form. EX1002, 60. Claim 2 depended from claim 1, and added the additional requirement that “the first time slot also includes a downlink shared channel.” *Id.*, 28. Thus, claim 2 added the additional requirement that a single timeslot is shared by the physical control channel with power control bits for a plurality of UEs (e.g., the PLCCH) and another downlink shared channel, and information transmitted over the physical control (i.e., a control message with power control bits for a plurality of UEs) is used by the mobile station to effectuate power control.

In response to the First Office Action, the Applicant amended independent claim 1 to further recite “wherein the first timeslot also includes a downlink shared channel.” Thus, the claim was amended to require a single timeslot shared by a

physical control channel with power control bits for a plurality of UEs and another downlink shared channel. EX1002, 126. The Applicant inserted similar limitations into the other independent claims.

In the next Office Action, the Examiner issued a Notice of Allowance. EX1002, 137-141. Based on the prosecution history, it is clear that, from the Examiner's perspective, the point of novelty of the independent claims of the '889 Patent was the requirement that a single timeslot is shared by a physical control channel with power control bits for a plurality of UEs and another downlink shared channel, and information transmitted over the physical control (i.e., a control message with power control bits for a plurality of UEs) is used by the mobile station to effectuate power control. EX2013, ¶44. As explained later, the primary reference relied on in the Petition (Dateki) lacks this aspect of the Challenged Claims.

IV. CHALLENGED CLAIMS OF THE '889 PATENT

Petitioner challenges claims 1-8 of the '889 Patent, of which claims 1 and 5 are independent. Independent Claim 1 is representative, and recites:

1. A first user equipment (UE) comprising:
a transmitter;
a receiver; and
a processor, operatively coupled to the transmitter and the receiver,
wherein:
the receiver and the processor are configured to receive a control message over a physical control channel in a first time slot, wherein the first time slot also includes a downlink shared channel, wherein the control message has power control bits for

a plurality of UEs, wherein the plurality of UEs include the first UE,

the processor is further configured to extract power control information for the first UE from the control message, and the transmitter and the processor are configured to transmit a signal over a physical control channel to a base station in a second time slot at a transmission power level based on the extracted power control information.

Claim 1 recites a first UE having a combination of interrelated limitations, several of which are emphasized above. More specifically, the claim recites (i) “a control message” (singular) where “the control message has power control bits for a plurality of UEs” that “include the first UE,” (ii) the control message is transmitted in a time slot that “also a includes a downlink shared channel,” and (iii) the UE transmits a signal over a physical control channel to the base station based on power control information extracted from the control message that was transmitted in the timeslot that included the downlink shared channel. To be clear, the claim language requires all three of these limitations to be practiced in combination.

V. CLAIM CONSTRUCTION

The claim limitations at issue must be construed under *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). Claim language is not read in isolation. *Phillips*, 415 F.3d at 1315. Rather, the claim language, when read in light of the specification and the prosecution history, elucidates the meaning of the claim language.

A. “extract power control information ... from the control message, and ... transmit a signal ... to a base station ... at a transmission power level based on the extracted power control information” (claims 1 and 5)

Claim 1 recites a control message where “the control message” (singular) “has power control bits for a plurality of UEs.” Claim 1 further recites that the first UE is configured to “extract power control information ... from the control message, and ... transmit a signal ... to a base station ... at a transmission power level based on the extracted power control information.” Claim 5 recites similar limitations. This claim language requires that “the extracted power control information” upon which the UE bases its transmission of a signal be the same power control information extracted from the control message (singular) having power control bits for a plurality of UEs. Simply put, the claim language would not be met if “the extracted power control information” used for transmitting the signal came from a control message that had power control bits for only a single UE. EX2013, ¶48.

B. “a control message ... wherein the control message has power control bits for a plurality of UEs” (claims 1 and 5)

Claim 1 recites “a control message ... wherein the control message has power control bits for a plurality of UEs.” This claim language requires that there be one control message (singular) that has power control bits for a plurality of UEs. The claim language itself, as well as the specification, supports this construction.

1. The Claim Language Requires That There Be One Control Message (Singular) That Has Power Control Bits For A Plurality Of UEs

Starting with the claim language itself, the claim begins by introducing “a control message” and later specifies that “the control message has power control bits for a plurality of UEs.” In a series of decisions discussed below, the Federal Circuit has made clear that when a claim element is introduced with the indefinite article “a” and then later in the claim “the” element is further defined with additional characteristics, the claim language requires that a single instance of the element have all of the additional characteristics. EX2013, ¶50.

In *Salazar v. AT&T Mobility, LLC*, 64 F. 4th 1311 (Fed. Cir. 2023), the Court addressed the proper construction of a claim that began by reciting “a microprocessor” for performing one function and then later in the claim “said microprocessor” was further defined with additional functions. *Id.*, 64 F. 4th at 1313. The Court found that the claim language “requires a singular element - “a microprocessor” - to be capable of performing all of the recited functionality.” *Id.*, 64 F. 4th at 1317 (emphasis added). In reaching this conclusion, the Court rejected a proposed construction that “would encompass one microprocessor capable of performing one claimed function and another microprocessor capable of performing a different claimed function, even if no one microprocessor could perform all of the recited functions.” *Id.*, 64 F. 4th at 1315.

... [W]e agree that the district court correctly construed the claim term Mr. Salazar challenges on appeal. Specifically, the district court properly interpreted “a microprocessor for generating . . . , said microprocessor creating . . . , a plurality of parameter sets retrieved by said microprocessor . . . , said microprocessor generating . . .” to mean “one or more microprocessors, at least one of which is configured to perform the generating, creating, retrieving, and generating functions.” We agree with the district court that while the claim term “a microprocessor” does not require there be only one microprocessor, the subsequent limitations referring back to “said microprocessor” require that at least one microprocessor be capable of performing each of the claimed functions. This approach is entirely consistent with our precedent. *Id.*, 64 F. 4th at 1317 (emphasis added) (citations omitted).

As was the case in *Salazar*, Claim 1 of the '889 Patent allows for multiple control messages; however, the multiple messages must include one message (*singular*) that has power control bits for a plurality of UEs in order to meet the claim language. For the reasons explained by the Court in *Salazar*, “the control message” recited in Claim 1 of the '889 Patent would not be met by two control messages, where one such message had power control bits for only one UE, and the second such message had power control bits for only one other UE.

The Court’s decision in *Salazar* relied the Court’s earlier rulings in *Convolve, Inc. v. Compaq Computer Corp.*, 812 F.3d 1313 (Fed. Cir. 2016), *In re Varma*, 816 F.3d 1352 (Fed. Cir. 2016), and *Harari v. Lee*, 656 F.3d 1331 (Fed. Cir. 2011), each of which addressed a claim element that was introduced with the indefinite article “a” and then later in the claim “the” element was further defined with additional characteristics. In all three of these earlier cases, the Court found that the claim

language required that a single instance of the element have all of the additional characteristics. *Salazar*, 64 F. 4th at 1316-1317, *citing*, *Convolve*, 812 F.3d 1313, 1321 (interpreting “[u]ser interface for ... working with a processor ... comprising”... to require “a single processor” having all of the subsequently recited characteristics”); *Salazar*, 64 F. 4th at 1317, *citing*, *In re Varma*, 816 F.3d 1352, 1362-63 (“[T]he question is not whether there can be more than one request in a claim-covered system: there can. Rather, the question is whether “a” can serve to negate what is required by the language following “a”: a “request” (a singular term) that “correspond[s]” to “two or more selected investments.” It cannot. For a dog owner to have “a dog that rolls over and fetches sticks,” it does not suffice that he have two dogs, each able to perform just one of the tasks. In the present case, no matter how many requests there may be, no matter the variety of the requests the system may receive, the system must be adapted to receive a request that itself corresponds to at least two investments”); and *Salazar*, 64 F. 4th at 1316, *citing*, *Harari*, 656 F.3d 1331, 1341-1342 (“the correct and only reasonable construction of the claim terms ‘a bit line’ and ‘said bit line’ . . . requires that a single bit line activates multiple memory cells.” Stated otherwise, “said bit line” later in the claim must be the same, singular bit line as “a bit line” earlier in the claim.”) (emphasis added).

Under the Federal Circuit’s precedent set forth above, the correct and only reasonable construction of “a control message ... wherein the control message has

power control bits for a plurality of UEs,” as recited in Claim 1 of the '889 Patent is a construction that requires that there be one control message (singular) that has power control bits for a plurality of UEs. Claim 5 of the '889 Patent contains identical language reciting “a control message ... wherein the control message has power control bits for a plurality of UEs” and should be construed the same way as the corresponding language in Claim 1.

2. The Specification Also Demonstrates That The Claims Require There Be One Control Message (Singular) That Has Power Control Bits For A Plurality Of UEs

As noted above, the Background of the '889 Patent disparaged closed-loop power control techniques that required a dedicated feedback channel, characterizing such techniques as inferior. EX1001, 1:57-61; EX2013, ¶51. In the context of the '889 Patent, a dedicated control channel in this disparaged system is “a point to point ... channel that transmits dedicated control information between a [single] UE and the network.”¹ *Id.* In such a channel, the base station can only communicate with

¹ See, EX2015, §3.3 (defining DCCH as abbreviation of “Dedicated Control Channel”) and §8.1.2.1 (explaining function of DCCH). EX2004 corresponds to TR 25.912, “Feasibility Study for Evolved UTRA and UTRAN,” which the '889 Patent incorporates by reference. EX1001, 4:8-12. EX2015 corresponds to the version of TR 25.912 dated September, 2006, which is the latest version of TR 25.912 that predates the December 27, 2006 filing date identified in the '889 Patent. EX1001, 1:20-21 (referring to December 27, 2006 filing date) and EX2004, 1 (bearing date of “2006-09.”) EX2013, ¶51, note 1.

one UE at a time. For example, the base station can address a first message to one UE which the base station initially sends to the first UE over the dedicated channel, and the base station can address a different message to another UE which the base station subsequently, separately sends to the other UE over the dedicated channel. *Id.*

After disparaging the use of dedicated channels for carrying information to UEs, the '889 Patent proposed the use of a physical layer common control channel (or PLCCH) to carry feedback information from the base station to the UEs. EX1001, 2:52-54. EX2013, ¶52. Embodiments of the PLCCH correspond to one message addressed to multiple UEs and that includes multiple bits, where each bit in the message corresponds to a terminal transmitting a UL_Beacon. EX1001, 5:17-29; EXEX2013, ¶52.

Based on Federal Circuit precedent (discussed below), the distinction between the dedicated channel disparaged in the Background of the '889 and the PLCCH disclosed in the Detailed Description of the '889 Patent supports, indeed mandates, Patent Owner's proposed construction of "a control message ... wherein the control message has power control bits for a plurality of UEs" as requiring that there be one control message (singular) that has power control bits for a plurality of UEs. In contrast to a dedicated channel (disparaged) where the base station communicates

by separately addressing messages to individual UEs, the '889 Patent proposed a solution where one message is directed to multiple UEs. EX2013, ¶53.

The law is clear that claims should not be read so broadly as to encompass a prior art structure distinguished in the specification. *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337 (Fed. Cir. 2001), *citing*, *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1159 (Fed. Cir. 1998) (specification distinguished prior art as inferior and touted advantages of a conical shaped cup for use in an artificial hip device; “such statements make clear that the '589 patent discloses *only* conical shaped cups and nothing further”); *Ekchian v. Home Depot, Inc.*, 104 F.3d 1299, 1304 (Fed. Cir. 1997) (“Since, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection.”). Even where the language of the claims, read without reference to the specification, might be considered broad enough to encompass a feature, that feature is deemed to be outside the reach of the claims where the specification makes clear that the invention does not include the particular feature. *Chi. Bd. Options Exch., Inc. v. Int'l Sec. Exch., LLC*, 677 F.3d 1361 (Fed. Cir. 2012), *citing*, *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1319 (Fed. Cir. 2006).

Similarly, in the present case, the claims must be read in light of the specification, where a dedicated channel through which messages can be separately

addressed to individual UEs was disparaged and thereby surrendered. It would be an error to interpret the claims of the '889 Patent so broadly as to cover this surrendered subject matter. Specifically, interpreting the claim language “a control message ... wherein the control message has power control bits for a plurality of UEs” so as to cover two control messages each containing the address of a different UE (where one of the two messages had power control bits for only one UE, and the second of such messages had power control bits for only one other UE) would be error, because the specification of the '889 Patent makes clear that such an arrangement is not covered.

In summary, the Federal Circuit’s decisions in *Salazar*, *Convolve*, *In re Varma* and *Harari*, all make clear that the correct construction of “a control message ... wherein the control message has power control bits for a plurality of UEs,” as recited in Claims 1 and 5 of the '889 Patent requires that there be one control message (singular) that has power control bits for a plurality of UEs. For the reasons set forth in those decisions, “the control message” recited in the claims would not be met by two control messages with different addresses, where one such message had power control bits for only one UE, and the second such message had power control bits for only one other UE. This construction is also supported by the specification which surrendered the use of a dedicated control channel for carrying the feedback

information to UEs where, for example, messages can be separately addressed to individual UEs.

VI. REFERENCES RELIED ON IN PETITION

The Petition advances three Grounds. Ground 1 asserts that independent claims 1 and 5, and dependent claims 2 and 6, are obvious over Dateki (EX1005) alone. Ground 2 asserts that dependent claims 3 and 7 are obvious over Dateki in view of Mate (EX1009), and Ground 3 asserts that dependent claims 4 and 8 are obvious Dateki in view of Chitrapu (EX1008).

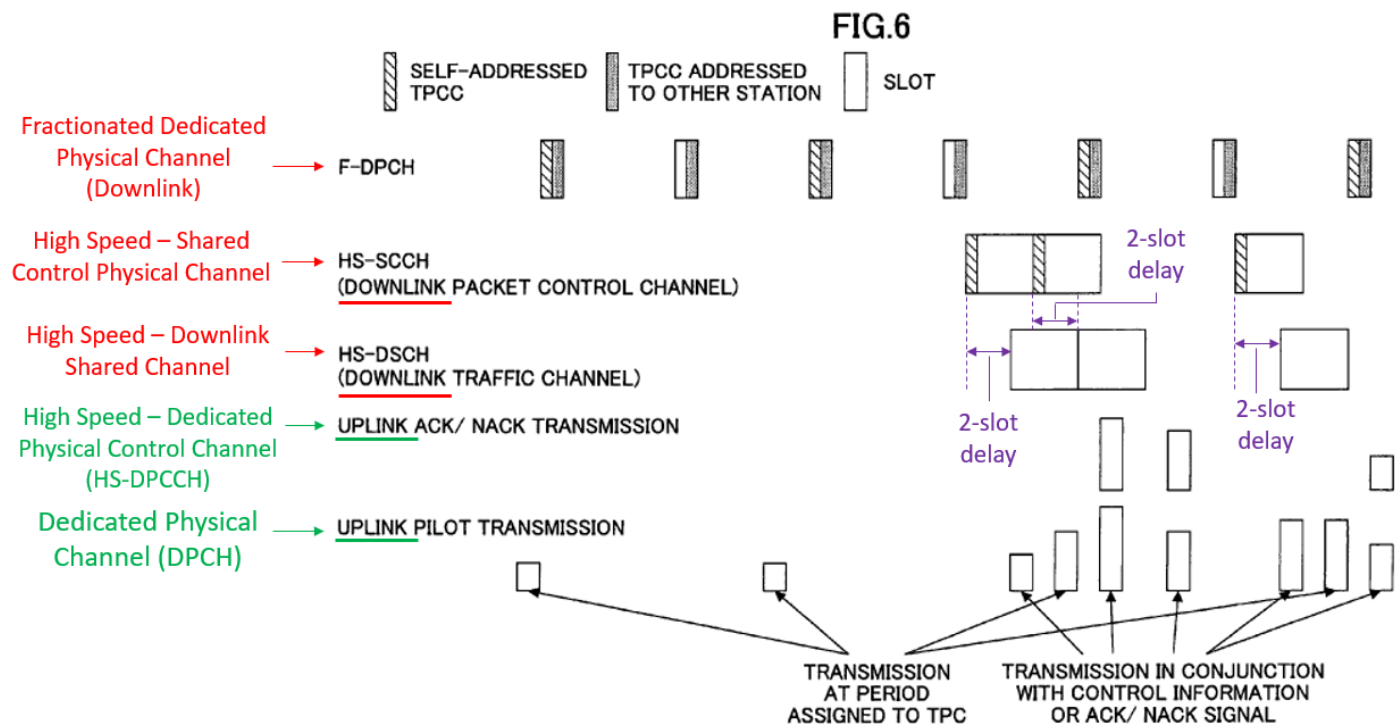
A. Dateki

As its sole reference for Ground 1, the Petition relies on Dateki. Dateki relates to a wireless communication apparatus for “controlling transmission power according to transmission power control information.” EX1005, 1:10-13. The Petition (at 3-43) relies *exclusively* on Figure 6 of Dateki for Elements [1.2] - [1.6]; accordingly, the overview of Dateki presented below therefore focuses on the disclosure associated with that figure.

1. Operation Of Downlink Channels On Figure 6 Of Dateki

Figure 6 of Dateki (reproduced below with Patent Owner’s annotations in color) is “a diagram illustrating a transmission power control operation according to a second embodiment” of Dateki. *Id.*, 7:44-46. The top three channels on the figure

(labelled in **red**) correspond to downlink channels (carrying transmissions from a base station to a UE), and the bottom two channels (labelled in **green**) correspond to uplink channels (carrying transmissions from a UE to a base station). EX2013, ¶56.



The top channel in Figure 6 is labelled “F-DPCH,” which stands for “Fractioned - Dedicated Physical Channel.” Id., 12:1-2. As explained further below, this channel transmits transmission power control messages (each of which is referred to as a TPCC) to each UE by providing a separate individual power control message that includes the address of each such UE (EXEX2013, ¶57):

The F-DPCH corresponds to a channel that is capable of transmitting a slot including plural TPC bits addressed to differing mobile stations. In the illustrated example, TPC bits addressed to two mobile stations are temporally multiplexed. ... [I]n this example, the transmission period of the TPC bits addressed to one mobile station

(i.e., indicated as self-addressed TPC bits) is set to two slots. That is, the self-addressed TPC bit is not included in every other slot. Also, the transmission period of the TPCC *addressed to another mobile* station is also set to two slots. *Id.*, 12:13-24 (emphasis added).

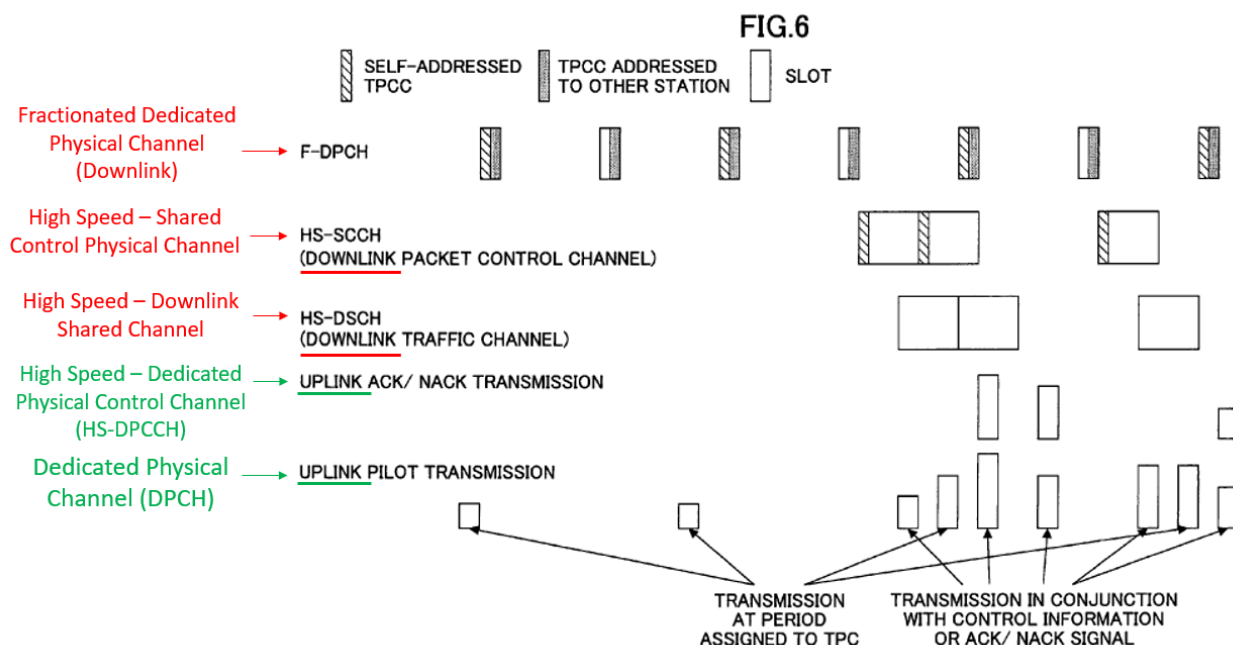
The channel below the Fractionated - Dedicated Physical Channel in Figure 6 is labelled “HS-SCCH,” which stands for “High Speed - Shared Control Physical Channel.” *Id.*, 12:4-5. “The HS-SCCH corresponds to a control channel for transmitting parameter information” pertaining to data transmitted to a particular UE on the High Speed - Downlink Shared Channel. *Id.*, 2:27-29 (emphasis added). As shown in Figure 6, the beginning of each frame on the HS-SCCH carries power control information (denoted in the figure as “Self-Addressed TPCC”) which is addressed to the specific UE that is the intended recipient of data traffic on the High Speed - Downlink Shared Channel that is sent just after the start of the HS-SCCH frame. It bears emphasis that the power control information transmitted to a UE on the HS-SCCH is not intended for a plurality of UEs -- but rather only for the specific UE to which data is to be transmitted on the High Speed - Downlink Shared Channel. EX2013, ¶58.

As shown by the purple markings in annotated version of Figure 6 above, the start of each frame of data traffic on the High Speed - Downlink Shared Channel is delayed by two slots from the start of the previous HS-SCCH frame “so that the mobile station may receive and identify information pertaining to demodulation” of

the High Speed Downlink Shared Channel before the receipt of a frame with data traffic on that channel. *Id.*, 3:8-12. It bears emphasis that the power control information transmitted to a UE on the HS-SCCH is not intended for a plurality of UEs -- but rather only for the specific UE which is the intended recipient of the data traffic transmitted on the High Speed - Downlink Shared Channel after the two slot delay. EX2013, ¶59.

2. Operation Of Uplink Channels On Figure 6 Of Dateki

The bottom two channels (labelled in green) in the annotated version of Figure 6 (reproduced again below) correspond to uplink channels (carrying transmissions from the “self addressed” UE to a base station). The channel labelled “UPLINK ACK/NACK TRANSMISSION” corresponds to a High Speed - Dedicated Physical Control Channel (also referred to as the HS-DPCCH) used by the UE to send acknowledgment messages to the base station indicating whether or not data traffic sent from the base station to the mobile on the High Speed - Downlink Shared Channel was properly received. *Id.*, 12:3-32. “The HS-DPCCH ... corresponds to an uplink dedicated control channel from the mobile station to the base station, and is used upon transmitting from the mobile station to the base station an ACK signal or a NACK signal indicating whether data received via the HS-PDSCH are properly received.” *Id.*, 2:35-40; EX2013, ¶60.

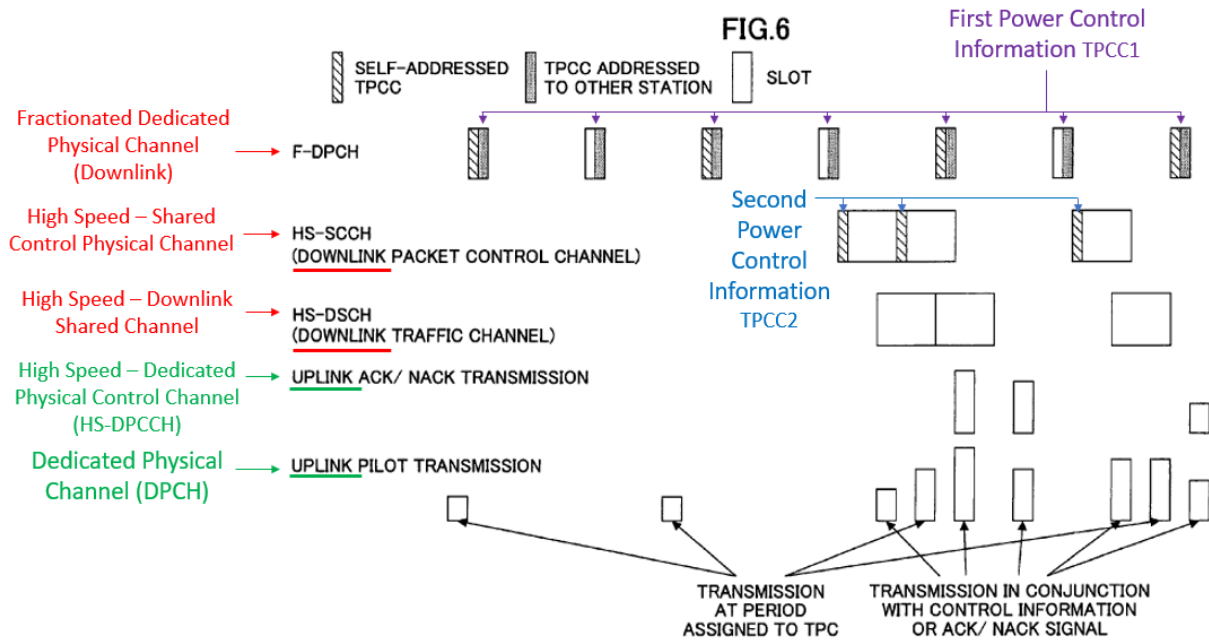


The bottom channel labelled “UPLINK PILOT TRANSMISSION” corresponds to a Dedicated Physical Channel (or a DPCH). *Id.*, 12:8-10. The DPCH (uplink) is used by the UE to transmit a pilot signal to the base station. EX2013, ¶61.

3. First Transmission Power Control Information (TPCC1) And Second Power Control Information (TPCC2) In Figure 6 Of Dateki

Dateki explains that the “base station receives a pilot signal, conducts SIR estimation on the pilot signal ... , generates transmission power control information TPCC ... , and transmits the transmission power control information TPCC” via the *F-DPCH* as *first transmission power control information TPCC.*” *Id.*, 13:1-8 (emphasis added); EX2013, ¶62. The *first* transmission power control information (labelled in purple on the diagram below) corresponds to the individually addressed

TPCC messages sent from the base station to mobile station on the Fractionated - Dedicated Physical Channel (*F-DPCH*). *Id.*; EX2013, ¶62. Dateki also refers to the first transmission power control information as TPCC1. *Id.*, 13:50-52; EX2013, ¶62.



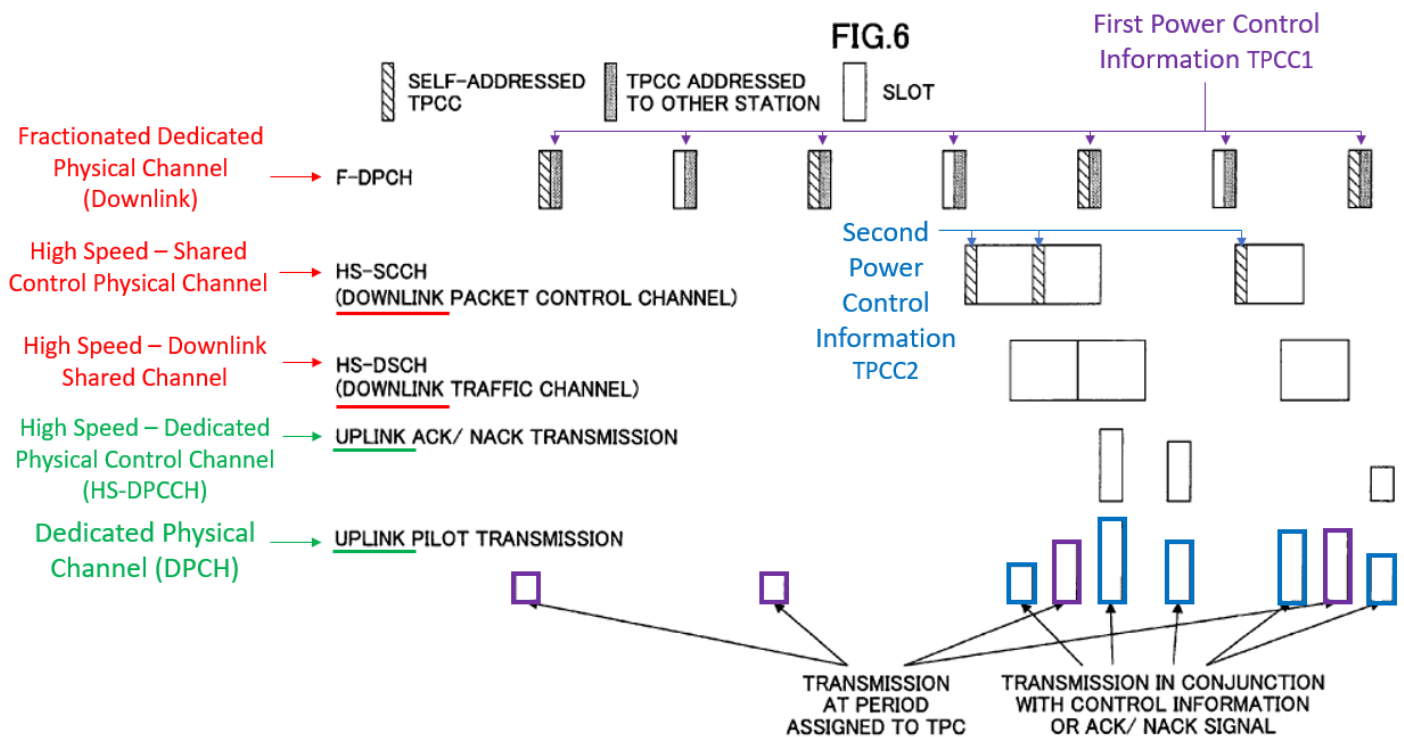
In addition to transmitting the first transmission power control information (*TPCC1*) on the F-DPCH, the base station transmits second transmission power control information (*TPCC2*) (labelled in blue in the diagram above) to the mobile station on the HS-SCCH. EX2013, ¶63. Dateki explains that “the second transmission power control information TPCC2 is arranged to be greater than the first transmission power control information TPCC1 (TPCC1<TPCC2). According to the present embodiment, in transmitting the ACK/NACK signal, for example, the second transmission power control information TPCC2 that is previously received

via the HS-SCCH may be used to swiftly control the transmission power to a desired level.” *Id.*, 13:50-62.

Thus, in Dateki’s embodiment of Figure 6, it is clear that the mobile station uses the second power control information (TPCC2) in cases where data traffic (packet transmission) is sent from the base station to the mobile station. *Id.*, 13:8-11 (“where packet transmission is conducted, the transmission power control information is transmitted via the HS-SCCH as second transmission power control information”); EX2013, ¶64. Specifically, where data traffic is sent from the base station to the mobile station, the mobile station uses the second power control information (TPCC2) sent on the HS-SCCH to control the power of the ACK/NACK signal returned by the mobile station to the base station. *Id.*, 13:8-23 and 13:57-62; see also, 12:61-65 (“It is noted that the reception of the HS-PDSCH and the transmission of the ACK/NACK signal are conducted in conjunction with the reception of the HS-SCCH”); 6:29-39 (“According to another aspect of the present invention, a wireless communication apparatus is provided ... that realizes data transmission via a shared channel, the apparatus including: a transmission unit that is configured to ... transmit control information for receiving the data including second transmission power control information when transmitting the data to the mobile station”); EX2013, ¶64.

4. Transmission Of Pilot Signals Varies Depending On Transmission Of Data Traffic On The High Speed - Downlink Shared Channel (HS-DSCH)

In Figure 6 of Dateki (reproduced again below with annotations), there are two groups of pilot signals that are transmitted by the mobile station. Each pilot signal in the first group [purple boxes below] is transmitted in conjunction with the transmission period of the *first* transmission power control information” (also labeled in purple as TPCC1).” *Id.*, 12:37-39; EX2013, ¶65. Each pilot symbol in the first group [purple boxes] is transmitted just before the transmission timing of the next transmission of the *first* transmission power control information (TPCC1). *Id.*, 12:37-41; EX2013, ¶65.



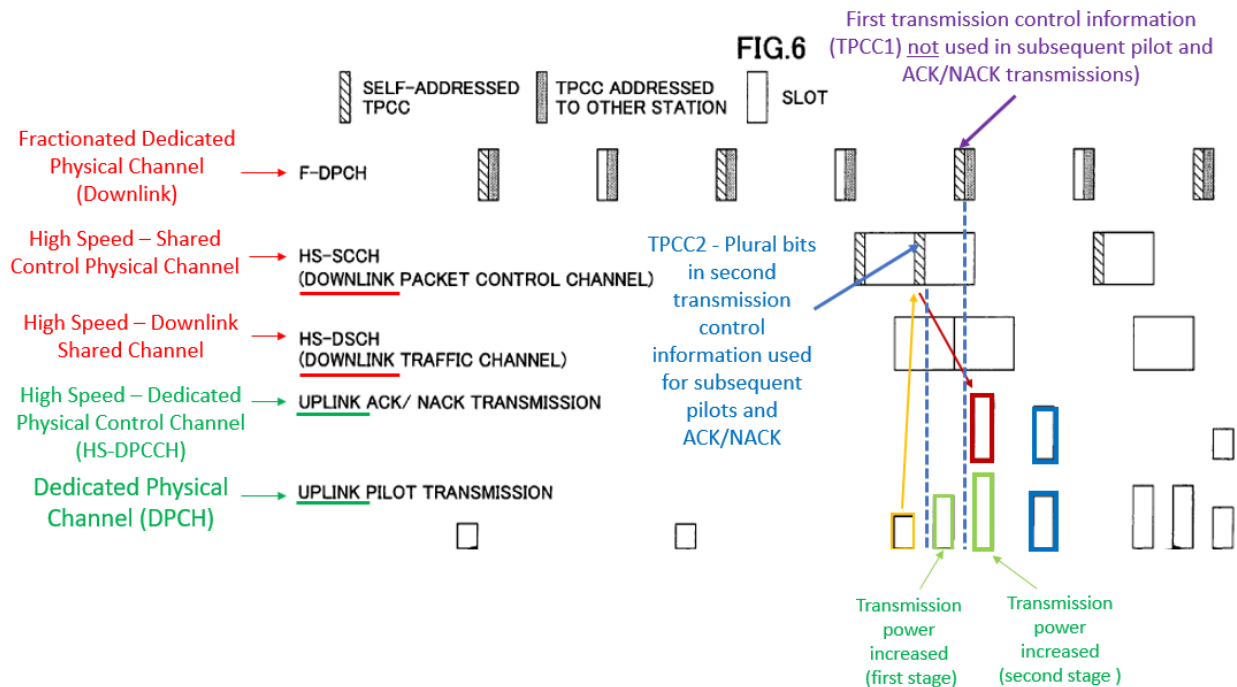
In contrast to the first group of pilot signals, the second group of pilot signals [blue boxes above] are triggered in different ways. More specifically, the pilot signals in the second group [blue boxes above] are “transmitted in conjunction with the transmission of control information and ACK/NACK signals that are transmitted via the HS-SCCH. That is, when a mobile station recognizes that data is being transmitted to itself via the HS-SCCH, or when it receives data addressed to itself via the HS-PDSCH, it transmits a known signal (pilot signal) upon transmitting an ACK signal or a NACK signal.” *Id.*, 12:53-60. Thus, whenever the mobile station recognizes (via the HS-SCCH) that data is being transmitted to the mobile station or when the mobile station is transmitting an ACK/NACK, the mobile station sends the pilot signals in the blue boxes above. EX2013, ¶66. Significantly, power control of the pilot signals transmitted in conjunction with an ACK/NACK is affected by the second power control information (TPCC2) sent on the HS-SCCH (rather than the first power control information (TPCC1 sent on the F-DACH). *See, Id.*, 12:48 (equating “known signal” with “pilot signal”) and 12:61-65 (“It is noted that the reception of the HS-PDSCH and the transmission of the ACK/NACK signal are conducted in conjunction with the reception of the HS-SCCH, and thereby, in either case, the known signal is transmitted in conjunction with the reception of the HS-SCCH”); EX2013, ¶66.

5. Figure 6 Of Dateki Illustrates Power Control Information (e.g., TPCC2) That Includes Plural Bits That Increase/Decrease Transmission Power In Plural Stages.

Dateki discloses that transmission power control information, e.g., the second power control information TPCC2, “may be arranged to use plural bits so that transmission power control may be conducted in plural stages (i.e., so that transmission power may be increased or decreased in plural stages).” *Id.*, 11:15-18 (emphasis added). Using “plural bits” from one power control message to increase/decrease transmission power in “plural stages” means, for example, that power control bits from one power control message (e.g., a TPCC2 message sent on the HS-SCCH) are used by the mobile station to adjust the transmission power in stages over multiple subsequent transmissions. EX2013, ¶67.

As shown in Figure 6 (reproduced again below with colored annotations), “[w]hen a base station receives the third (from the left) pilot signal [orange box], the base station may generate the second (from the left) TPC bit [labelled TPCC2] in the HS-SCCH based on the third pilot signal, and thereby, accurate transmission power control may be conducted upon transmitting the first ACK signal [reddish-brown box].” *Id.*, 13:66-14:4 (emphasis added). The orange arrow extending from the third pilot from the left to TPCC2 illustrates that the value of TPCC2 is based on the third pilot signal from the left, while the reddish-brown arrow extending from TPCC2 to

the first ACK signal [reddish-brown box] illustrates that *the second (from the left) TPC bit* [labelled TPCC2] *controls the transmission power of the first ACK signal.* *Id.*, 13:66-14:4; EX2013, ¶68.



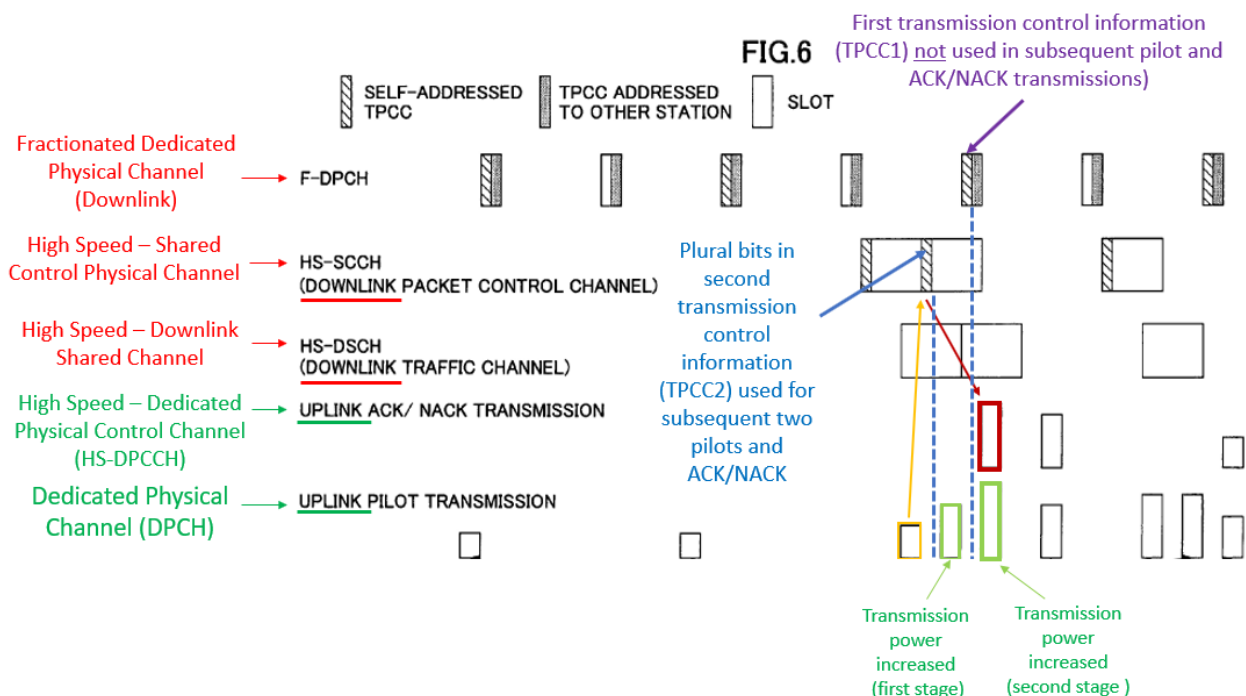
This aspect of Figure 6 illustrates the use of plural bits in one power control message [labelled TPCC2 above] to increase transmission power in stages. EX2013, ¶68. Given that no intervening power control messages are provided between the mobile station receiving the power control message labelled TPCC2 and the mobile station increasing the transmission power of its pilot by a first amount (as shown in the leftmost green box above), it is clear that the information from the message labelled TPCC2 is used to increase the transmission power of the pilot signal in the leftmost green box (above) by a first amount or in a “first stage.” *Id.* Moreover, given (i)

Dateki's *explicit* statement (at 13:66-14:4) that the message labelled *TCPP2 is used to control the transmission power of the first ACK* [reddish brown box above], and (ii) and Dateki's teaching (at 12:53-60) that the mobile station sends a pilot signal when transmitting an ACK/NACK (as shown in the rightmost green box above), it is clear that the information from the message labelled *TPCC2 is also used to increase transmission power of the pilot signal in the rightmost green box* (above) again or in a "second stage." EX2013, ¶68. As explained more fully in Section V(A)(7), *infra*, the power of the second ACK/NACK signal as well as the pilot transmitted therewith (blue boxes above), are also controlled by the power control message [labelled TPCC2 above] to decrease transmission power in a third stage. EX2013, ¶68.

6. Dateki Does Not Maintain Complete Correspondence Between The Transmission Power Control Message Immediately Preceding A Pilot Signal Or ACK/NACK And The Power Level At Which Such Pilot Signal Or ACK/NACK Is Transmitted

The fact that Dateki uses plural bits in one power control message to increase/decrease the transmission level in successive (plural) stages is significant because it means that Dateki does not maintain complete correspondence between the transmission power control message immediately preceding a pilot signal or ACK/NACK and the power level at which such pilot signal or ACK/NACK is transmitted. EX2013, ¶69. For example, it is clear that in Figure 6, the information

from the message labelled TPCC2 is used to increase the transmission power of the pilot signal in the leftmost green box by a first amount or in a “first stage,” and the information from the same message labelled TPCC2 is also used to increase the transmission power of the pilot signal in the rightmost green box again or in a “second stage.” *Id.* Thus, as shown in the annotated version of Figure 6 below, even though the first transmission control information labelled in purple as TPCC1 (below) comes before both the transmission power of the first ACK [reddish-brown box below] and the pilot signal in the rightmost green box, Dateki makes clear that the power level of the first ACK and the pilot signal transmitted with the first ACK is not controlled by the first transmission control information (labelled in purple as TPCC1) but rather by power control bits in the second transmission control information identified with blue arrow as TPCC2 below. *Id.*



7. In Figure 6 Of Dateki, Power Control For ACK/NACK Signals And Pilot Signals Transmitted With ACK/NACK Signals Is Performed Using Second Power Control Information (TPCC2)

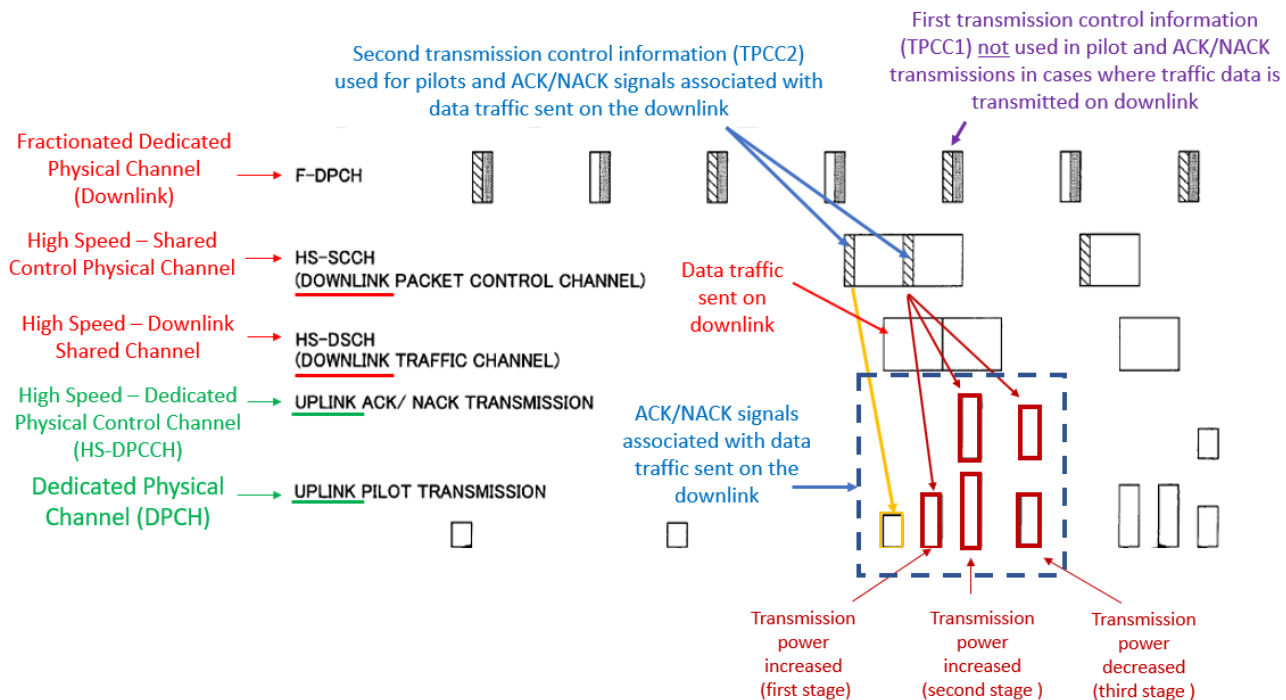
As explained above, where data traffic is sent from the base station to the mobile station, the mobile station uses the second power control information (TPCC2) sent on the HS-SCCH to control the power of both the ACK/NACK signal returned by the mobile station to the base station and the pilot signal transmitted at the same time as the ACK/NACK. Id., 3:8-11 (“where packet transmission is conducted, the transmission power control information is transmitted via the HS-SCCH as second transmission power control information”); 3:8-23 (“in a case where packet transmission is conducted, the transmission power control information is transmitted via the HS-SCCH as second transmission power control information ...

in a case where data are transmitted via the HS-PDSCH, transmission power control may be conducted through transmission of an ACK/NACK signal ... based on the transmission power control information TPCC that is previously transmitted via the HS-SCCH. Thereby, transmission power may be suitably controlled to quickly respond to the transmission quality”); 13:57-62 (“According to the present embodiment, in transmitting the ACK/NACK signal, for example, the second transmission power control information TPCC2 that is previously received via the HS-SCCH may be used to swiftly control the transmission power to a desired level”); 12:61-65 (“It is noted that the reception of the HS-PDSCH and the transmission of the ACK/NACK signal are conducted in conjunction with the reception of the HS-SCCH”); 6:29-39 (“According to another aspect of the present invention, a wireless communication apparatus is provided ... that realizes data transmission via a shared channel, the apparatus including: a transmission unit that is configured to ... transmit control information for receiving the data including second transmission power control information when transmitting the data to the mobile station”); and 12:48 (equating “known signal” with “pilot signal”); EX2013, ¶70.

Dateki’s disclosure that the mobile station uses the greater power level (associated with TPCC2) for transmitting the ACK/NACK (and the pilot signals transmitted therewith) makes complete sense. When a mobile station receives data, it is important for the mobile station to be able to send an ACK/NACK signal to the

base station with a power level that is high enough to ensure that the base station can accurately receive the ACK/NACK signals. EX2013, ¶71. In Figure 6 of Dateki, when a mobile station is not sending ACK/NACK messages, there is little need for the mobile station to send its pilot signal at a high power level because the consequence of the pilot signal not being received by the base station is small. *Id.* However, when a mobile station transmits an ACK/NACK signal to the base station, the consequence of the ACK/NACK not being heard is significant, i.e., the base station does not know whether the data it previously transmitted was properly received and, as a result, does not know whether it is necessary to retransmit such data to the mobile station. *Id.* Thus, in connection with sending ACK/NACK signals (and the pilot signals transmitted therewith), the mobile station in Figure 6 of Dateki uses the explicitly greater power level (associated with TPCC2) to ensure that the mobile station transmits the signals with sufficient power that the base station can accurately receive the ACK/NACK signals. *Id.*

The annotated version of Figure 6 of Dateki below depicts in the [blue dotted box](#) the pilot and ACK/NACK signals sent by the UE based on the second power control information (TPCC2) transmitted to the UE on the HS-SCCH channel in (labelled with [blue arrow](#)) conjunction with the transmission of data traffic (labelled with [red arrow](#)) on the downlink traffic channel. EX2013, ¶72.



The orange arrow depicts that the next pilot signal (orange box) transmitted by the UE after receipt of the second power control information associated with the leftmost TPCC2 information is based on the power control information in the leftmost TPCC2. EX1005, 12:53-55 (“The pilot signal is also transmitted in conjunction with the transmission of control information ... transmitted via the HS-SCCH.”) EX2013, ¶73.

As explained in Section V(A)(5), *supra*, in Figure 6, plural bits in the second from the left TPCC2 message are used to vary transmission power in stages. *Id.*, 11:15-18 (explaining that power control information, e.g., the second power control information TPCC2, “may be arranged to use plural bits so that transmission power control may be conducted in plural stages (i.e., so that transmission power may be

increased or decreased in plural stages).” (emphasis added). It is clear from Dateki’s disclosure of Figure 6 that the power levels of (i) pilot signal following the second from the left TPCC2 message labelled “first stage”, (ii) the first ACK/NACK and pilot labelled “second stage” and (iii) the second ACK/NACK and pilot labelled “third stage,” are controlled by the second from the left TPCC2 message that is used to vary transmission power in three stages. EX2013, ¶74.

With respect to the pilot signal labelled “first stage,” given that *no intervening power control messages* are provided between the mobile station receiving the second from left TPCC2 information and the mobile station increasing the transmission power of its pilot by a first amount (labelled “first stage” above), it is clear that the information from the second from the left TPCC2 *must* be what is used to increase the transmission power of the pilot signal labelled “first stage.” EX2013, ¶75.

With respect to the first ACK/NACK and pilot labelled “second stage,” the information in the second from the left TPCC2 is also used to increase transmission power of the first ACK/NACK and pilot transmitted therewith again in a “second stage.” EX2013, ¶76. Given (i) Dateki’s *explicit* statement (at 13:66-14:4) that information in the second from left TPCC2 is used to control the transmission power of the first ACK, and (ii) and Dateki’s teaching (at, e.g., 12:53-60) that the mobile station sends a pilot signal when transmitting an ACK/NACK, it is clear that the

information in the second from the left TPCC2 is what is used to increase the transmission power of the first ACK/NACK and pilot transmitted therewith again in a “second stage.” EX2013, ¶76.

With respect to the second ACK/NACK and pilot labelled “third stage,” the information in the second from the left TPCC2 is also used to decrease the transmission power of the first ACK/NACK and pilot transmitted therewith again in a “third stage.” EX2013, ¶77. Given (i) Dateki’s repeated statements that second power control information TPCC2 is used to control the transmission of ACK/NACK messages associated with data traffic sent on the downlink (EX1005, 3:8-11, 3:8-23, 13:57-62, 12:61-65 and 6:29-39), and (ii) and Dateki’s teaching (at, e.g., 12:53-60) that the mobile station sends a pilot signal when transmitting an ACK/NACK, it is clear that the information in the second from the left TPCC2 is what is used to decrease the transmission power of the second ACK/NACK and pilot transmitted therewith again in a “third stage.” EX2013, ¶77. Given that the purpose of Dateki’s use of the greater power level of the second power control information (TPCC2) for transmitting the ACK/NACK (and the pilot signals transmitted therewith), it would make no sense for the mobile station to begin using the first power control information (TPCC1) prior to the mobile station’s transmission of the second ACK/NACK signal to the base station. *Id.* More specifically, given the need for the mobile station to send ACK/NACK signals to the base station with a power

level that is high enough to ensure that the base station can accurately receive the ACK/NACK signals, it would not make sense for the mobile station to switch to the use of the lower first power control information (TPCC1) until *after* the final ACK/NACK associated with a given data transmission was sent. *Id.* For this further reason, it is clear that the information in the second from the left TPCC2 (rather than TPCC1) is what is used to decrease the transmission power of the second ACK/NACK and pilot transmitted therewith again in a “third stage.” *Id.*

B. Mate

Mate discloses “[a] method of downlink packet switching for use in a mobile telecommunications network having a plurality of base stations.” EX1009, Abstract.

C. Chitrapu

Chitrapu is directed to “WCDMA for the Unpaired Spectrum.” EX1008, 6.

VII. GROUND 1 FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD OF SUCCESS

Ground 1 challenges independent claims 1 and 5 of the '889 Patent as obvious over Dateki alone. Petitioner therefore, bears the burden of showing that each element of independent claims 1 and 5 is met by Dateki either expressly or inherently, or is obvious based on Dateki alone. As discussed below, Petitioner has failed to carry its burden with respect to at least two elements of independent claims 1 and 5.

First, claims 1 and 5 require a UE to transmit a signal *based on power control information extracted from “the control message” (singular) having power control*

bits for a plurality of UEs, and “the control message” *must also share a time slot with a downlink shared channel*. The Petition maps “the control message” recited in the claims to first power control information (TPCC1) transmitted on the F-DPCH channel in Figure 6 of Dateki, and maps the “downlink shared channel” in the claims to the downlink data traffic channel (High Speed - Downlink Shared Channel) in Figure 6 of Dateki. This mapping fails because *whenever the F-DPCH channel and the downlink data traffic channel* in Figure 6 of Dateki *share a time slot*, the first power control information (TPCC1) on the F-DPCH (mapped to “the control message”) is *not used for the UE’s transmission power*, as required by the Challenged Claims. EX2013, ¶81. Rather, *the F-DPCH channel and the downlink data traffic channel* in Figure 6 of Dateki *only share a time slot in cases where data is being transmitted to the UE on the downlink traffic channel*, and in those cases, the *second power control information (TPCC2)* on the HS-SCCH -- as opposed to the first power control information (TPCC1) transmitted on the F-DPCH -- is *used by the UE to control the UE’s transmission power*.² *Id.*

² The Petition does *not* contend (nor could it) that the second power control information (TPCC2) on the HS-SCCH maps to “the control message” in the claims of the '889 Patent. As shown in Figure 6 of Dateki, each frame on the HS-SCCH has power control information for *only a single UE*. Thus, the power control information in each HS-SCCH frame cannot be “the control message” because it lacks power control bits for “*a plurality of UEs*.” EX2013, ¶81, note 3.

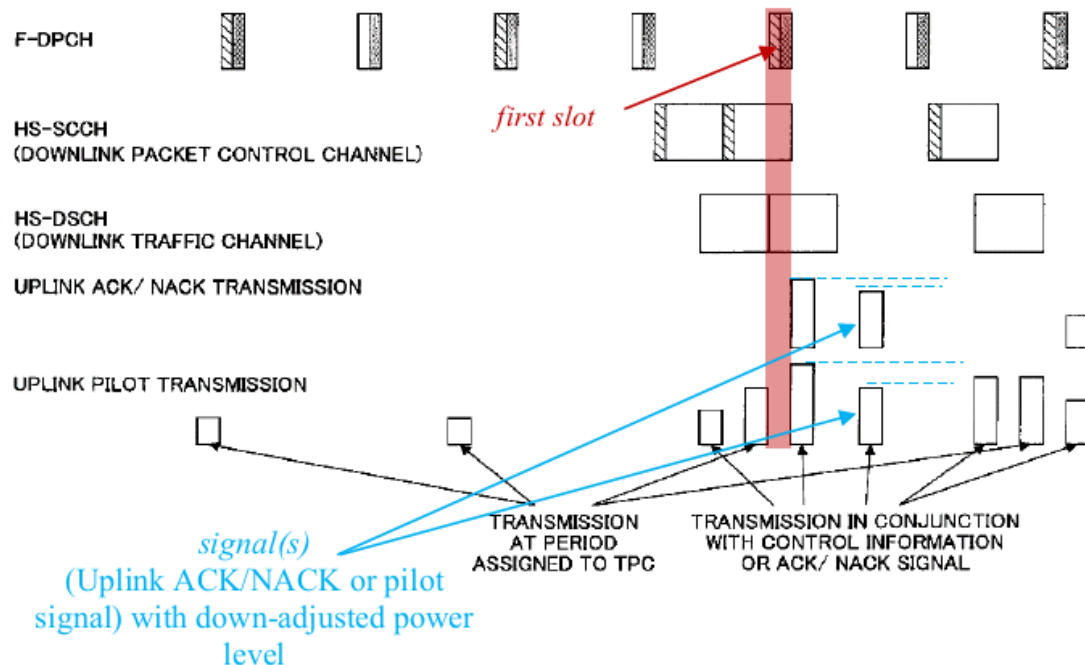
Second, the Petition fails to demonstrate that Dateki discloses (either expressly or inherently) “a control message ... wherein the control message has power control bits for a plurality of UEs,” as recited in Claims 1 and 5 of the '889 Patent. As explained above, this claim language requires that there be one control message (singular) that has power control bits for a plurality of UEs. This claim limitation cannot be met by two control messages, where one such message had power control bits for only one UE, and the second such message had power control bits for only one other UE. EX2013, ¶82.

A. The Petition Has Failed To Demonstrate That The UE Uses The First Power Control Information Sent On The F-DPCH In Figure 6 of Dateki For Power Control In The Case Where Downlink Data Traffic Is Being Sent To The UE

The Petition maps a transmission of first power control information (TPCCI) sent on the F-DPCH in Figure 6 of Dateki to “the control message” recited in independent claims 1 and 5 of the '889 Patent. Pet., 32 (“the TPC commands carried in the F-DPCH (control channel) comprise a *control message*.”) (emphasis in original). The Petition maps the High Speed Downlink Shared Channel (HS-PDSCH) in Figure 6 of Dateki to the “downlink shared channel” recited in independent claims 1 and 5 of the '889 Patent. Pet., 35 (stating that the HS-PDSCH “is an example of the *downlink shared channel* in limitation [1.2].”) (emphasis in original). Since the claims require that “the control message” be in a time slot that

on first power control information received over the F-DPCH. Pet., 41-42. The

Petition (at 41) illustrates this aspect of its mappings as follows:



With respect to its assertion that that the second uplink ACK/NACK signal, or the pilot signal transmitted therewith is transmitted based on first power control information received over the F-DPCH, the Petition (and Petitioner's expert) state only the following:

As shown in annotated FIG. 6 above, the height of the second ACK/NACK signal and second pilot signal changes after the UE receives and extracts the TPCC information from the F-DPCH. Thus, the second uplink ACK/NACK signal, or the pilot signal, (*a signal*) is transmitted *based on the extracted power control information*. EX1003, ¶106. Pet., 41-42.

This reasoning makes little sense. EX2013, ¶85. For example, while from the height of the second ACK/NACK signal (and its corresponding pilot signal) does change

after the UE receives the identified TPCC information on the F-DPCH, the Petition fails to mention that the height of the first ACK/NACK signal (and its corresponding pilot signal) also changed after the UE receives the identified TPCC information on the F-DPCH. *Id.* However, Dateki makes clear that even though the height of the first ACK/NACK signal (and its corresponding pilot signal) changes after the UE receives the specified TPCC information on the F-DPCH -- that height change is not based on the specified TPCC information sent on the F-DPCH but rather on second power control information transmitted over the HS-SCCH. EX1005, 13:66-14:4 (“[w]hen a base station receives the third (from the left) pilot signal, the base station may generate the second (from the left) TPC bit in the HS-SCCH based on the third pilot signal, and thereby, accurate transmission power control may be conducted upon transmitting the first ACK signal”) (emphasis added); EX2013, ¶85.

Simply put, the Petition fails to explain why the second ACK/NACK signal (and its corresponding pilot signal) following the specified TPCC information on the F-DPCH would be based on such TPCC information on the F-DPCH, when the first ACK/NACK signal (and its corresponding pilot signal) immediately following the specified TPCC information on the F-DPCH was not based on TPCC information from the F-DPCH. EX2013, ¶86.

The Petition provides no citation to Dateki in support of the assertion that the second ACK/NACK signal (and its corresponding pilot signal) is based on the

specified TPCC information on the F-DPCH because the disclosure of Dateki compels the opposite conclusion. EX2013, ¶87. Specifically, as explained in Section V(A)(7), *supra*, Dateki’s disclosure that second power control information sent over the HS-SCCH is used to control the transmission of ACK/NACK messages associated with data traffic sent on the downlink (EX1005, 3:8-11, 3:8-23, 13:57-62, 12:61-65 and 6:29-39), and Dateki’s teaching (at, e.g., 12:53-60) that the mobile station sends a pilot signal when transmitting an ACK/NACK, make clear that the height of the second ACK/NACK signal (and its corresponding pilot signal) are based on second power control information sent over the HS-SCCH (not first power control information sent on the F-DPCH as asserted in the Petition). EX2013, ¶87. Petitioner and its expert are not interpreting Dateki -- but rather attempting to re-write the reference.

Simply put, the mapping in the Petition fails because the first power control information sent on the F-DPCH (mapped to “the control message” recited in claims 1 and 5) is not used as the basis for the UE’s transmission power, as required by the Challenged Claims.³ Rather, the F-DPCH channel and the downlink data traffic

³ For example, claim 1 recites in part “the processor is further configured to extract power control information for the first UE from the control message, and the transmitter and the processor are configured to transmit a signal over a physical control channel to a base station in a second time slot at a transmission power level based on the extracted power control information.”

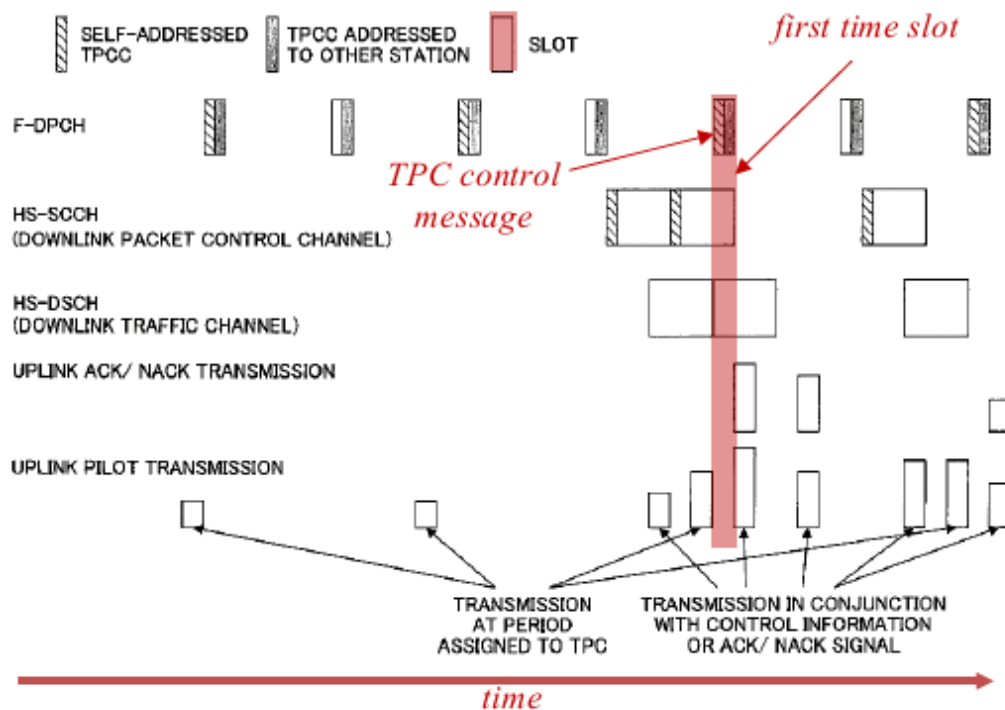
channel in Figure 6 of Dateki only share a time slot in cases where data is being transmitted to the UE on the downlink traffic channel, and in those cases, the second power control information (TPCC2) on the HS-SCCH⁴ -- not the first power control information (TPCC1) transmitted on the F-DPCH -- is used by the UE to control the UE's transmission power. EX2013, ¶88.

B. The Petition Has Failed To Demonstrate That A Single Message With Power Control Bits For A Plurality Of UEs Is Sent On The F-DPCH In Figure 6 Of Dateki

As explained in Section V(B), *supra*, the correct construction of “a control message ... wherein the control message has power control bits for a plurality of UEs,” as recited in Claims 1 and 5 of the '889 Patent requires that there be one control message (singular) that has power control bits for a plurality of UEs. Moreover, for the reasons explained in Section V(B), *supra*, “the control message” recited in the claims would not be met by two control messages with different addresses, where one such message had power control bits for only one UE, and the second such message had power control bits for only one other UE.

⁴ As explained in note 3, *supra*, the Petition does not contend (nor could it) that the second power control information (TPCC2) on the HS-SCCH maps to “the control message” because each frame on the HS-SCCH has power control information for only a single UE and thus lacks the requirement that “the control message” have power control bits for “a plurality of UEs.”

The Petition (at 32) asserts that “the TPC commands carried in the F-DPCH (control channel) comprise a *control message*.” However, the Petition fails to explain how the collection of TPC commands carried in the F-DPCH includes one control message (singular) that has power control bits for a plurality of UEs, as required by the Challenged Claims. EX2013, ¶90. As shown in the following illustration from the Petition (at 33), the Petition alleges that one “self-addressed TPCC” grouped in the same time slot with a “TPCC addressed to other station” is a “TPC control message” that meets the claim language:



As explained in Sections II(A)(3) and V(B)(2), *supra*, the '889 Patent disparaged such a dedicated channel where the base station communicates by

separately addressing messages to individual UEs, in favor of a solution where one message is directed to multiple UEs. The Petition fails to explain why the Dateki's Fractioned - Dedicated Physical Channel (or F-DPCH) functions differently than the dedicated channel disclosed in the Background of the '889 Patent. EX2013, ¶91. Dateki makes clear that, even though multiple TPCC messages may share a time slot, separate addressing is used for each message (EX2013, ¶91):

The F-DPCH corresponds to a channel that is capable of transmitting a slot including plural TPC bits addressed to differing mobile stations. In the illustrated example, TPC bits addressed to two mobile stations are temporally multiplexed. ... [I]n this example, the transmission period of the TPC bits addressed to one mobile station (i.e., indicated as self-addressed TPC bits) is set to two slots. That is, the self-addressed TPC bit is not included in every other slot. Also, the transmission period of the TPCC addressed to another mobile station is also set to two slots. EX1005, 12:13-24 (emphasis added).

The Petition does not grapple with this disclosure in Dateki, or explain how plural messages that are separately addressed to different UEs constitute a single message with power control bits for a plurality of UEs, as claimed. For this further reason, the Petition fails to present a reasonable likelihood of success with respect to Ground 1. EX2013, ¶92.

In arguing that the separately addressed messages on Dateki's F-DPCH map to the "control message" recited in claims 1 and 5 of the '889 Patent, the Petitioner (and its expert) assert:

... Dateki discloses transmitting a power *control message* over the F-

DPCH: “[t]he F-DPCH corresponds to a channel that is capable of transmitting a slot including plural TPC [transmit power control] bits addressed to differing mobile stations.” Ex.1005, 12:13-15. The TPC commands (or bits) carried in the F-DPCH comprise a *control message*, because the TPC commands are communicated together in a control channel (F-DPCH), and the TPC commands are used to facilitate the maintenance, stability, and quality of the communication link. Ex.1003, ¶80. Pet., 29-30 (emphasis added).

The fact that the TPC commands are communicated together in a control channel does not mean that such TPC commands equate to a single message with power control bits for a plurality of UEs, as claimed. EX2013, ¶94. When a postal carrier transports a bag of mail with letters addressed to different houses, the entire bag of mail does not equate to a single message simply because the letters are in the same bag. In this analogy, a timeslot on the F-DPCH corresponds to the bag of mail where each letter in the bag is separately addressed to a different UE. The Petition fails to explain how plural messages that are separately addressed to different UEs constitute a single message simply because they are transported “together” in a common timeslot on the same channel. *Id.*

In arguing that the separately addressed messages on Dateki’s F-DPCH map to the “control message” recited in claims 1 and 5 of the '889 Patent, Petitioner (and its expert) also assert:

... Dateki’s F-DPCH communication that includes TPCC for plural users (“self-addressed,” and “to other station”), grouped and transmitted together in the slot, is an example of a *control message*. In this regard, Dateki explains that the TPC bits for the plural users are

encoded “using the same code.” Ex.1005, 4:35-40; Ex.1003, ¶83. Pet., 33-34 (emphasis in original).

In asserting that the F-DPCH shown *in Figure 6 of Dateki* carries TPC bits for plural users that are encoded “using the same code,” the Petition provides no citation to Dateki’s description of the F-DPCH in Figure 6. Rather, the Petition relies on a statement in Dateki’s background (i.e., EX1005, 4:35-40) describing a prior art F-DPCH. However, Dateki describes the prior art F-DPCH in the background differently from the F-DPCH disclosed in connection with Figure 6, and nowhere equates the two. EX2013, ¶96. For example, unlike the prior art F-DPCH in the background, the F-DPCH in Figure 6 is described as transmitting “TPC bits addressed to differing mobile stations” where some bits are “addressed to one mobile station” and other bits are “addressed to another mobile station.” EX1005, 12:13-24 (emphasis added). In discussing the prior art F-DPCH in the background, Dateki makes no mention of any such addressing. EX2013, ¶96.

Finally, even if the Petition were able to show that the F-DPCH in Figure 6 of Dateki encoded TPC bits for the plural users “using the same code” (to be clear, the Petition has not shown this), the Petition still would not have explained how “the control message” recited in claims 1 and 5 of the '889 is met by the F-DPCH in Figure 6 of Dateki. More specifically, the Petition fails to explain why plural messages that include the separate addresses of different UEs constitute a single

message simply because they are encoded “using the same code.” EX2013, ¶97. Here again, Petitioner and its expert are not interpreting Dateki -- but rather attempting to re-write the reference.

For all of the above reasons, the Petition has failed to present a reasonable likelihood of success that the F-DPCH in Figure 6 of Dateki carries a single message with power control bits for a plurality of UEs, as claimed.

C. Ground 1 Fails To Demonstrate A Reasonable Likelihood Of Success With Respect To Any Challenged Claims

As set forth above, Petitioner has failed to demonstrate a reasonable likelihood of success in challenging independent claims 1 and 5. Since the obviousness arguments in Ground 1 directed to dependent claims 2 and 6 of the ‘889 Patent are predicated on the deficient arguments challenging independent claims 1 and 5 as discussed above, Ground 1 also fails to demonstrate a reasonable likelihood of success with respect to dependent claims 2 and 6 of the ‘889 Patent.

VIII. GROUND 2 FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD OF SUCCESS ON THE MERITS

For the reasons set forth above, Petitioner has failed to demonstrate a reasonable likelihood of success in challenging independent claims 1 and 5. Since the obviousness arguments in Ground 2 directed to dependent claims 3 and 7 of the ‘889 Patent are predicated on the deficient arguments challenging independent

claims 1 and 5, Ground 2 fails to demonstrate a reasonable likelihood of success with respect to dependent claims 3 and 7 of the '889 Patent.

IX. GROUND 3 FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD OF SUCCESS ON THE MERITS

For the reasons set forth above, Petitioner has failed to demonstrate a reasonable likelihood of success in challenging independent claims 1 and 5. Since the obviousness arguments in Ground 3 directed to dependent claims 4 and 8 of the '889 Patent are predicated on the deficient arguments challenging independent claims 1 and 5, Ground 3 fails to demonstrate a reasonable likelihood of success with respect to dependent claims 4 and 8 of the '889 Patent.

X. CONCLUSION

The Board should deny institution of inter partes review of the '889 Patent under 35 U.S.C. § 314(a). Petitioner has failed to demonstrate a reasonable likelihood of prevailing on any ground of unpatentability.

Respectfully submitted,

Dated: April 9, 2025

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CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this Response complies with the type-volume limits of 37 C.F.R. § 42.24(b)(1) because it contains 13,899 words, excluding the parts of this Patent Owner's Preliminary Response that are exempted by 37 C.F.R. § 42.24(a), according to the word processing system used to prepare this Patent Owner's Preliminary Response.

Respectfully submitted,

Dated: April 9, 2025

By: /Daniel H. Golub/
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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **PATENT OWNER'S PRELIMINARY RESPONSE** was served via email (as consented to by counsel) on April 9, 2025 to lead and backup counsel of record for Petitioner as follows:

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