

EXHIBIT K-8

Summary of Invalidity Analysis of U.S. Patent No. 10,009,161 (“’161 Patent”) in view of 3GPP TS 36.213 V12.0.0 (2013-12)

3GPP TS 36.213 V12.0.0 (2013-12) (“TS 36.213”) published on December 20, 2013. Therefore, TS 36.213 qualifies as prior art to the ’161 Patent under at least 35 U.S.C. §§ 102(a). As described in the following claim chart, at least under Pegasus’s apparent infringement theory, the asserted claims of the ’161 Patent are invalid as expressly and/or inherently anticipated by TS 36.213.

To the extent that TS 36.213 is found not to anticipate, expressly or inherently, one or more of the asserted claims of the ’161 Patent, at least under Pegasus’s apparent infringement theory, these claims are invalid as obvious in view of TS 36.213 in view of the background knowledge and ordinary creativity of a person having ordinary skill in the art at the time of the alleged invention, or in combination with other prior art identified in the cover pleading, herein, or as disclosed in Defendants’ Invalidity Contentions and accompanying charts and appendices. A person of ordinary skill would have been motivated to combine TS 36.213 and any other prior art references, including but not limited to the other prior art identified in the cover pleading or herein, with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.

Defendants reserve the right to amend or supplement this invalidity chart at a later date.

1. Claim 1

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
1[pre]	A method for transmitting channel state information by a User Equipment (UE), the method comprising:	To the extent the preamble is limiting, at least under Pegasus's apparent infringement theory, TS 36.213 discloses a method for transmitting channel state information by a User Equipment (UE). For example, TS 36.213 discloses this limitation based on the following exemplary citations: 7.2 UE procedure for reporting Channel State Information (CSI) The time and frequency resources that can be used by the UE to report CSI which consists of Channel Quality Indicator (CQI), precoding matrix indicator (PMI), precoding type indicator (PTI), and/or rank indication (RI) are controlled by the eNB. For spatial multiplexing, as given in [3], the UE shall determine a RI corresponding to the number of useful transmission layers. For transmit diversity as given in [3], RI is equal to one. A UE in transmission mode 8 or 9 is configured with or without PMI/RI reporting by the higher layer parameter <i>pmi-RI-Report</i>. A UE in transmission mode 10 can be configured with one or more CSI processes per serving cell by higher layers. Each CSI process is associated with a CSI-RS resource (defined in subclause 7.2.5) and a CSI-interference measurement (CSI-IM) resource (defined in subclause 7.2.6). A CSI reported by the UE corresponds to a CSI process configured by higher layers. Each CSI process can be configured with or without PMI/RI reporting by higher layer signalling. A UE is configured with resource-restricted CSI measurements if the subframe sets $C_{CSI,0}$ and $C_{CSI,1}$ are configured by higher layers. CSI reporting is periodic or aperiodic. If the UE is configured with more than one serving cell, it transmits CSI for activated serving cell(s) only. If a UE is not configured for simultaneous PUSCH and PUCCH transmission, it shall transmit periodic CSI reporting on PUCCH as defined hereafter in subframes with no PUSCH allocation.

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		If a UE is not configured for simultaneous PUSCH and PUCCH transmission, it shall transmit periodic CSI reporting on PUSCH of the serving cell with smallest <i>ServCellIndex</i> as defined hereafter in subframes with a PUSCH allocation, where the UE shall use the same PUCCH-based periodic CSI reporting format on PUSCH. A UE shall transmit aperiodic CSI reporting on PUSCH if the conditions specified hereafter are met. For aperiodic CQI/PMI reporting, RI reporting is transmitted only if the configured CSI feedback type supports RI reporting. The CSI transmissions on PUCCH and PUSCH for various scheduling modes are summarized in the following table: <i>Id.</i> at 55. To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
1[a]	receiving a reference signal for measuring channel quality from a base station;	At least under Pegasus's apparent infringement theory, TS 36.213 discloses receiving a reference signal for measuring channel quality from a base station. For example, TS 36.213 discloses this limitation based on the following exemplary citations: 7.2.3 Channel Quality Indicator (CQI) definition The CQI indices and their interpretations are given in Table 7.2.3-1. Based on an unrestricted observation interval in time and frequency, the UE shall derive for each CQI value reported in uplink subframe <i>n</i> the highest CQI index

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		between 1 and 15 in Table 7.2.3-1 which satisfies the following condition, or CQI index 0 if CQI index 1 does not satisfy the condition: - A single PDSCH transport block with a combination of modulation scheme and transport block size corresponding to the CQI index, and occupying a group of downlink physical resource blocks termed the CSI reference resource, could be received with a transport block error probability not exceeding 0.1. If CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ are configured by higher layers, each CSI reference resource belongs to either $C_{\text{CSI},0}$ or $C_{\text{CSI},1}$ but not to both. When CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ are configured by higher layers a UE is not expected to receive a trigger for which the CSI reference resource is in subframe that does not belong to either subframe set. For a UE in transmission mode 10 and periodic CSI reporting, the CSI subframe set for the CSI reference resource is configured by higher layers for each CSI process. For a UE in transmission mode 9 when parameter <i>pmi-RI-Report</i> is configured by higher layers, the UE shall derive the channel measurements for computing the CQI value reported in uplink subframe n based on only the Channel-State Information (CSI) reference signals (CSI-RS) defined in [3] for which the UE is configured to assume non-zero power for the CSI-RS. For a UE in transmission mode 9 when the parameter <i>pmi-RI-Report</i> is not configured by higher layers or in transmission modes 1-8 the UE shall derive the channel measurements for computing CQI based on CRS. For a UE in transmission mode 10, the UE shall derive the channel measurements for computing the CQI value reported in uplink subframe n and corresponding to a CSI process, based on only the non-zero power CSI-RS (defined in [3]) within a configured CSI-RS resource associated with the CSI process. For a UE in transmission mode 10, the UE shall derive the interference measurements for computing the CQI value reported in uplink subframe n and

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		corresponding to a CSI process, based on only the zero power CSI-RS (defined in [3]) within the configured CSI-IM resource associated with the CSI process. If the UE in transmission mode 10 is configured by higher layers for CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ for the CSI process, the configured CSI-IM resource within the subframe subset belonging to the CSI reference resource is used to derive the interference measurement. <i>Id.</i> at 81. To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
1[b]	measuring the channel quality based on the reference signal, and selecting a channel quality indicator (CQI) index value from a predetermined CQI index table including CQI index values for 256 quadrature amplitude modulation (QAM) modulation, based on the	At least under Pegasus's apparent infringement theory, TS 36.213 discloses measuring the channel quality based on the reference signal, and selecting a channel quality indicator (CQI) index value from a predetermined CQI index table including CQI index values for 256 quadrature amplitude modulation (QAM) modulation, based on the measurement result of the channel quality. For example, TS 36.213 discloses this limitation based on the following exemplary citations: 7.2.3 Channel Quality Indicator (CQI) definition The CQI indices and their interpretations are given in Table 7.2.3-1.

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	measurement result of the channel quality; and	Based on an unrestricted observation interval in time and frequency, the UE shall derive for each CQI value reported in uplink subframe n the highest CQI index between 1 and 15 in Table 7.2.3-1 which satisfies the following condition, or CQI index 0 if CQI index 1 does not satisfy the condition: - A single PDSCH transport block with a combination of modulation scheme and transport block size corresponding to the CQI index, and occupying a group of downlink physical resource blocks termed the CSI reference resource, could be received with a transport block error probability not exceeding 0.1. If CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ are configured by higher layers, each CSI reference resource belongs to either $C_{\text{CSI},0}$ or $C_{\text{CSI},1}$ but not to both. When CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ are configured by higher layers a UE is not expected to receive a trigger for which the CSI reference resource is in subframe that does not belong to either subframe set. For a UE in transmission mode 10 and periodic CSI reporting, the CSI subframe set for the CSI reference resource is configured by higher layers for each CSI process. For a UE in transmission mode 9 when parameter <i>pmi-RI-Report</i> is configured by higher layers, the UE shall derive the channel measurements for computing the CQI value reported in uplink subframe n based on only the Channel-State Information (CSI) reference signals (CSI-RS) defined in [3] for which the UE is configured to assume non-zero power for the CSI-RS. For a UE in transmission mode 9 when the parameter <i>pmi-RI-Report</i> is not configured by higher layers or in transmission modes 1-8 the UE shall derive the channel measurements for computing CQI based on CRS. For a UE in transmission mode 10, the UE shall derive the channel measurements for computing the CQI value reported in uplink subframe n and corresponding to a CSI process, based on only the non-zero power CSI-RS (defined in [3]) within a configured CSI-RS resource associated with the CSI process.

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		For a UE in transmission mode 10 , the UE shall derive the interference measurements for computing the CQI value reported in uplink subframe n and corresponding to a CSI process, based on only the zero power CSI-RS (defined in [3]) within the configured CSI-IM resource associated with the CSI process. If the UE in transmission mode 10 is configured by higher layers for CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ for the CSI process, the configured CSI-IM resource within the subframe subset belonging to the CSI reference resource is used to derive the interference measurement. A combination of modulation scheme and transport block size corresponds to a CQI index if: - the combination could be signalled for transmission on the PDSCH in the CSI reference resource according to the relevant Transport Block Size table, and - the modulation scheme is indicated by the CQI index, and - the combination of transport block size and modulation scheme when applied to the reference resource results in the effective channel code rate which is the closest possible to the code rate indicated by the CQI index. If more than one combination of transport block size and modulation scheme results in an effective channel code rate equally close to the code rate indicated by the CQI index, only the combination with the smallest of such transport block sizes is relevant. The CSI reference resource for a serving cell is defined as follows: - In the frequency domain, the CSI reference resource is defined by the group of downlink physical resource blocks corresponding to the band to which the derived CQI value relates. - In the time domain,

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		○ for a UE configured in transmission mode 1-9 or transmission mode 10 with a single configured CSI process for the serving cell, the CSI reference resource is defined by a single downlink subframe $n-n_{CQI_ref}$, ▪ where for periodic CSI reporting n_{CQI_ref} is the smallest value greater than or equal to 4, such that it corresponds to a valid downlink subframe; ▪ where for aperiodic CSI reporting n_{CQI_ref} is such that the reference resource is in the same valid downlink subframe as the corresponding CSI request in an uplink DCI format. ▪ where for aperiodic CSI reporting n_{CQI_ref} is equal to 4 and downlink subframe $n-n_{CQI_ref}$ corresponds to a valid downlink subframe, where downlink subframe $n-n_{CQI_ref}$ is received after the subframe with the corresponding CSI request in a Random Access Response Grant. ○ for a UE configured in transmission mode 10 with multiple configured CSI processes for the serving cell, the CSI reference resource for a given CSI process is defined by a single downlink subframe $n-n_{CQI_ref}$, ▪ where for FDD and periodic or aperiodic CSI reporting n_{CQI_ref} is the smallest value greater than or equal to 5, such that it corresponds to a valid downlink subframe, and for aperiodic CSI reporting the corresponding CSI request is in an uplink DCI format; ▪ where for FDD and aperiodic CSI reporting n_{CQI_ref} is equal to 5 and downlink subframe $n-n_{CQI_ref}$ corresponds to a valid downlink subframe, where downlink subframe $n-n_{CQI_ref}$ is received after the subframe with the corresponding CSI request in a Random Access Response Grant.

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		▪ where for TDD, and 2 or 3 configured CSI processes, and periodic or aperiodic CSI reporting, n_{CQI_ref} is the smallest value greater than or equal to 4, such that it corresponds to a valid downlink subframe, and for aperiodic CSI reporting the corresponding CSI request is in an uplink DCI format; ▪ where for TDD, and 2 or 3 configured CSI processes, and aperiodic CSI reporting, n_{CQI_ref} is equal to 4 and downlink subframe $n - n_{CQI_ref}$ corresponds to a valid downlink subframe, where downlink subframe $n - n_{CQI_ref}$ is received after the subframe with the corresponding CSI request in a Random Access Response Grant; ▪ where for TDD, and 4 configured CSI processes, and periodic or aperiodic CSI reporting, n_{CQI_ref} is the smallest value greater than or equal to 5, such that it corresponds to a valid downlink subframe, and for aperiodic CSI reporting the corresponding CSI request is in an uplink DCI format; ▪ where for TDD, and 4 configured CSI processes, and aperiodic CSI reporting, n_{CQI_ref} is equal to 5 and downlink subframe $n - n_{CQI_ref}$ corresponds to a valid downlink subframe, where downlink subframe $n - n_{CQI_ref}$ is received after the subframe with the corresponding CSI request in a Random Access Response Grant. A downlink subframe in a serving cell shall be considered to be valid if: ▪ it is configured as a downlink subframe for that UE, and ▪ in case multiple cells with different uplink-downlink configurations are aggregated and the UE is not capable of simultaneous reception and transmission in the aggregated cells, the subframe in the primary cell is a downlink subframe

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		or a special subframe with the length of DwPTS more than $7680 \cdot T_s$, and ▪ except for transmission mode 9 or 10, it is not an MBSFN subframe, and ▪ it does not contain a DwPTS field in case the length of DwPTS is $7680 \cdot T_s$ and less, and ▪ it does not fall within a configured measurement gap for that UE, and ▪ for periodic CSI reporting, it is an element of the CSI subframe set linked to the periodic CSI report when that UE is configured with CSI subframe sets, and ▪ for a UE configured in transmission mode 10 with multiple configured CSI processes, and aperiodic CSI reporting for a CSI process, it is an element of the CSI subframe set linked to the downlink subframe with the corresponding CSI request in an uplink DCI format, when that UE is configured with CSI subframe sets for the CSI process. If there is no valid downlink subframe for the CSI reference resource in a serving cell, CSI reporting is omitted for the serving cell in uplink subframe n. - In the layer domain, the CSI reference resource is defined by any RI and PMI on which the CQI is conditioned. In the CSI reference resource, the UE shall assume the following for the purpose of deriving the CQI index, and if also configured, PMI and RI: • The first 3 OFDM symbols are occupied by control signalling

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		- No resource elements used by primary or secondary synchronization signals or PBCH or EPDCCH - CP length of the non-MBSFN subframes - Redundancy Version 0 - If CSI-RS is used for channel measurements, the ratio of PDSCH EPRE to CSI-RS EPRE is as given in subclause 7.2.5 - For transmission mode 9 CSI reporting: - CRS REs are as in non-MBSFN subframes; - If the UE is configured for PMI/RI reporting, the UE-specific reference signal overhead is consistent with the most recent reported rank if more than one CSI-RS port is configured, and is consistent with rank 1 transmission if only one CSI-RS port is configured; and PDSCH signals on antenna ports $\{7 \dots 6 + \nu\}$ for ν layers would result in signals equivalent to corresponding symbols transmitted on antenna ports $\{15 \dots 14 + P\}$, as given by $\begin{bmatrix} y^{(15)}(i) \\ \vdots \\ y^{(14+P)}(i) \end{bmatrix} = W(i) \begin{bmatrix} x^{(0)}(i) \\ \vdots \\ x^{(\nu-1)}(i) \end{bmatrix}, \text{ where}$ $x(i) = [x^{(0)}(i) \dots x^{(\nu-1)}(i)]^T$ is a vector of symbols from the layer mapping in subclause 6.3.3.2 of [3], $P \in \{1,2,4,8\}$ is the number of CSI-RS ports configured, and if only one CSI-RS port is configured, $W(i)$ is 1, otherwise $W(i)$ is the precoding matrix corresponding to the reported PMI applicable to $x(i)$. The corresponding PDSCH signals transmitted on antenna ports $\{15 \dots 14 + P\}$ would have a ratio of EPRE to CSI-RS EPRE equal to the ratio given in subclause 7.2.5. - For transmission mode 10 CSI reporting, if a CSI process is configured without PMI/RI reporting: - If the number of antenna ports of the associated CSI-RS resource is one, a PDSCH transmission is on single-antenna port, port 7. The

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		channel on antenna port {7} is inferred from the channel on antenna port {15} of the associated CSI-RS resource. ▪ CRS REs are as in non-MBSFN subframes. The CRS overhead is assumed to be the same as the CRS overhead corresponding to the number of CRS antenna ports of the serving cell; ▪ The UE-specific reference signal overhead is 12 REs per PRB pair. ○ Otherwise, ▪ If the number of antenna ports of the associated CSI-RS resource is 2, the PDSCH transmission scheme assumes the transmit diversity scheme defined in subclause 7.1.2 on antenna ports {0,1} except that the channels on antenna ports {0,1} are inferred from the channels on antenna port {15, 16} of the associated CSI resource respectively. ▪ If the number of antenna ports of the associated CSI-RS resource is 4, the PDSCH transmission scheme assumes the transmit diversity scheme defined in subclause 7.1.2 on antenna ports {0,1,2,3} except that the channels on antenna ports {0,1,2,3} are inferred from the channels on antenna ports {15, 16, 17, 18} of the associated CSI-RS resource respectively. ▪ The UE is not expected to be configured with more than 4 antenna ports for the CSI-RS resource associated with the CSI process configured without PMI/RI reporting. ▪ The overhead of CRS REs is assuming the same number of antenna ports as that of the associated CSI-RS resource. ▪ UE-specific reference signal overhead is zero. • For transmission mode 10 CSI reporting, if a CSI process is configured with PMI/RI reporting:

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		○ CRS REs are as in non-MBSFN subframes. The CRS overhead is assumed to be the same as the CRS overhead corresponding to the number of CRS antenna ports of the serving cell; ○ The UE-specific reference signal overhead is consistent with the most recent reported rank for the CSI process if more than one CSI-RS port is configured, and is consistent with rank 1 transmission if only one CSI-RS port is configured; and PDSCH signals on antenna ports $\{7 \dots 6 + \nu\}$ for ν layers would result in signals equivalent to corresponding symbols transmitted on antenna ports $\{15 \dots 14 + P\}$, as given by $\begin{bmatrix} y^{(15)}(i) \\ \vdots \\ y^{(14+P)}(i) \end{bmatrix} = W(i) \begin{bmatrix} x^{(0)}(i) \\ \vdots \\ x^{(\nu-1)}(i) \end{bmatrix}, \text{ where } x(i) = [x^{(0)}(i) \dots x^{(\nu-1)}(i)]^T$ is a vector of symbols from the layer mapping in subclause 6.3.3.2 of [3], $P \in \{1, 2, 4, 8\}$ is the number of antenna ports of the associated CSI-RS resource, and if $P=1$, $W(i)$ is 1, otherwise $W(i)$ is the precoding matrix corresponding to the reported PMI applicable to $x(i)$. The corresponding PDSCH signals transmitted on antenna ports $\{15 \dots 14 + P\}$ would have a ratio of EPRE to CSI-RS EPRE equal to the ratio given in subclause 7.2.5 • Assume no REs allocated for CSI-RS and zero-power CSI-RS • Assume no REs allocated for PRS • The PDSCH transmission scheme given by Table 7.2.3-0 depending on the transmission mode currently configured for the UE (which may be the default mode). • If CRS is used for channel measurements, the ratio of PDSCH EPRE to cell-specific RS EPRE is as given in subclause 5.2 with the exception of ρ_A which shall be assumed to be

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		○ $\rho_A = P_A + \Delta_{offset} + 10\log_{10}(2)$ [dB] for any modulation scheme, if the UE is configured with transmission mode 2 with 4 cell-specific antenna ports, or transmission mode 3 with 4 cell-specific antenna ports and the associated RI is equal to one; ○ $\rho_A = P_A + \Delta_{offset}$ [dB] for any modulation scheme and any number of layers, otherwise. The shift Δ_{offset} is given by the parameter <i>nomPDSCH-RS-EPRE-Offset</i> which is configured by higher-layer signalling. <i>Id.</i> at 81-84. Table 7.2.3-1: 4-bit CQI Table <table> <tr> <th>CQI index</th><th>modulation</th><th>code rate x 1024</th><th>efficiency</th></tr> <tr> <td>0</td><td colspan="3">out of range</td></tr> <tr> <td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr> <tr> <td>2</td><td>QPSK</td><td>120</td><td>0.2344</td></tr> <tr> <td>3</td><td>QPSK</td><td>193</td><td>0.3770</td></tr> <tr> <td>4</td><td>QPSK</td><td>308</td><td>0.6016</td></tr> <tr> <td>5</td><td>QPSK</td><td>449</td><td>0.8770</td></tr> <tr> <td>6</td><td>QPSK</td><td>602</td><td>1.1758</td></tr> <tr> <td>7</td><td>16QAM</td><td>378</td><td>1.4766</td></tr> <tr> <td>8</td><td>16QAM</td><td>490</td><td>1.9141</td></tr> <tr> <td>9</td><td>16QAM</td><td>616</td><td>2.4063</td></tr> <tr> <td>10</td><td>64QAM</td><td>466</td><td>2.7305</td></tr> <tr> <td>11</td><td>64QAM</td><td>567</td><td>3.3223</td></tr> <tr> <td>12</td><td>64QAM</td><td>666</td><td>3.9023</td></tr> <tr> <td>13</td><td>64QAM</td><td>772</td><td>4.5234</td></tr> <tr> <td>14</td><td>64QAM</td><td>873</td><td>5.1152</td></tr> <tr> <td>15</td><td>64QAM</td><td>948</td><td>5.5547</td></tr> </table>		CQI index	modulation	code rate x 1024	efficiency	0	out of range			1	QPSK	78	0.1523	2	QPSK	120	0.2344	3	QPSK	193	0.3770	4	QPSK	308	0.6016	5	QPSK	449	0.8770	6	QPSK	602	1.1758	7	16QAM	378	1.4766	8	16QAM	490	1.9141	9	16QAM	616	2.4063	10	64QAM	466	2.7305	11	64QAM	567	3.3223	12	64QAM	666	3.9023	13	64QAM	772	4.5234	14	64QAM	873	5.1152	15	64QAM	948	5.5547
CQI index	modulation	code rate x 1024	efficiency																																																																				
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3	QPSK	193	0.3770																																																																				
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		Id. at 85. To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
1[c]	transmitting channel state information including the selected CQI index value to the base station,	At least under Pegasus's apparent infringement theory, TS 36.213 discloses transmitting channel state information including the selected CQI index value to the base station. For example, TS 36.213 discloses this limitation based on the following exemplary citations: 7.2 UE procedure for reporting Channel State Information (CSI) The time and frequency resources that can be used by the UE to report CSI which consists of Channel Quality Indicator (CQI), precoding matrix indicator (PMI), precoding type indicator (PTI), and/or rank indication (RI) are controlled by the eNB. For spatial multiplexing, as given in [3], the UE shall determine a RI corresponding to the number of useful transmission layers. For transmit diversity as given in [3], RI is equal to one. A UE in transmission mode 8 or 9 is configured with or without PMI/RI reporting by the higher layer parameter <i>pmi-RI-Report</i>. A UE in transmission mode 10 can be configured with one or more CSI processes per serving cell by higher layers. Each CSI process is associated with a CSI-RS resource (defined in subclause 7.2.5) and a CSI-interference measurement (CSI-IM) resource (defined in subclause 7.2.6). A CSI reported by the UE corresponds to a CSI process

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		configured by higher layers. Each CSI process can be configured with or without PMI/RI reporting by higher layer signalling. A UE is configured with resource-restricted CSI measurements if the subframe sets $C_{CSI,0}$ and $C_{CSI,1}$ are configured by higher layers. CSI reporting is periodic or aperiodic. If the UE is configured with more than one serving cell, it transmits CSI for activated serving cell(s) only. If a UE is not configured for simultaneous PUSCH and PUCCH transmission, it shall transmit periodic CSI reporting on PUCCH as defined hereafter in subframes with no PUSCH allocation. If a UE is not configured for simultaneous PUSCH and PUCCH transmission, it shall transmit periodic CSI reporting on PUSCH of the serving cell with smallest <i>ServCellIndex</i> as defined hereafter in subframes with a PUSCH allocation, where the UE shall use the same PUCCH-based periodic CSI reporting format on PUSCH. A UE shall transmit aperiodic CSI reporting on PUSCH if the conditions specified hereafter are met. For aperiodic CQI/PMI reporting, RI reporting is transmitted only if the configured CSI feedback type supports RI reporting. The CSI transmissions on PUCCH and PUSCH for various scheduling modes are summarized in the following table: Table 7.2-1: Physical Channels for Aperiodic or Periodic CSI reporting <table> <tr> <th>Scheduling Mode</th><th>Periodic CSI reporting channels</th><th>Aperiodic CSI reporting channel</th></tr> <tr> <td>Frequency non-selective</td><td>PUCCH</td><td></td></tr> <tr> <td>Frequency selective</td><td>PUCCH</td><td>PUSCH</td></tr> </table> In case both periodic and aperiodic CSI reporting would occur in the same subframe, the UE shall only transmit the aperiodic CSI report in that subframe. When reporting RI the UE reports a single instance of the number of useful transmission layers. For each RI reporting interval when the UE is configured in	Scheduling Mode	Periodic CSI reporting channels	Aperiodic CSI reporting channel	Frequency non-selective	PUCCH		Frequency selective	PUCCH	PUSCH
Scheduling Mode	Periodic CSI reporting channels	Aperiodic CSI reporting channel									
Frequency non-selective	PUCCH										
Frequency selective	PUCCH	PUSCH									

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		transmission modes 4 or when the UE is configured in transmission mode 8, 9 or 10 with PMI/RI reporting, a UE shall determine a RI from the supported set of RI values as defined in subclause 5.2.2.6 of [4] and report the number in each RI report. For each RI reporting interval when the UE is configured in transmission mode 3, a UE shall determine RI as defined in subclause 5.2.2.6 of [4] in each reporting interval and report the detected number in each RI report to support selection between transmit diversity and large delay CDD. When reporting PMI the UE reports either a single or a multiple PMI report. The number of RBs represented by a single UE PMI report can be N_{RB}^{DL} or a smaller subset of RBs. The number of RBs represented by a single PMI report is semi-statically configured by higher layer signalling. A UE is restricted to report PMI, RI and PTI within a precoder codebook subset specified by a bitmap parameter <i>codebookSubsetRestriction</i> configured by higher layer signalling. For a UE configured in transmission mode 10, the bitmap parameter <i>codebookSubsetRestriction</i> is configured for each CSI process and each subframe sets (if subframe sets $C_{CSI,0}$ and $C_{CSI,1}$ are configured by higher layers) by higher layer signaling. For a specific precoder codebook and associated transmission mode, the bitmap can specify all possible precoder codebook subsets from which the UE can assume the eNB may be using when the UE is configured in the relevant transmission mode. Codebook subset restriction is supported for transmission modes 3, 4, 5, 6 and for transmission modes 8, 9 and 10 with PMI/RI reporting. The resulting number of bits for each transmission mode is given in Table 7.2-1b. The bitmap forms the bit sequence $a_{A_c-1}, \dots, a_3, a_2, a_1, a_0$ where a_0 is the LSB and a_{A_c-1} is the MSB and where a bit value of zero indicates that the PMI and RI reporting is not allowed to correspond to precoder(s) associated with the bit. The association of bits to precoders for the relevant transmission modes are given as follows: <i>Id.</i> at 55-56.

	7.2.3 Channel Quality Indicator (CQI) definition The CQI indices and their interpretations are given in Table 7.2.3-1. Based on an unrestricted observation interval in time and frequency, the UE shall derive for each CQI value reported in uplink subframe n the highest CQI index between 1 and 15 in Table 7.2.3-1 which satisfies the following condition, or CQI index 0 if CQI index 1 does not satisfy the condition: - A single PDSCH transport block with a combination of modulation scheme and transport block size corresponding to the CQI index, and occupying a group of downlink physical resource blocks termed the CSI reference resource, could be received with a transport block error probability not exceeding 0.1. If CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ are configured by higher layers, each CSI reference resource belongs to either $C_{\text{CSI},0}$ or $C_{\text{CSI},1}$ but not to both. When CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ are configured by higher layers a UE is not expected to receive a trigger for which the CSI reference resource is in subframe that does not belong to either subframe set. For a UE in transmission mode 10 and periodic CSI reporting, the CSI subframe set for the CSI reference resource is configured by higher layers for each CSI process. For a UE in transmission mode 9 when parameter <i>pmi-RI-Report</i> is configured by higher layers, the UE shall derive the channel measurements for computing the CQI value reported in uplink subframe n based on only the Channel-State Information (CSI) reference signals (CSI-RS) defined in [3] for which the UE is configured to assume non-zero power for the CSI-RS. For a UE in transmission mode 9 when the parameter <i>pmi-RI-Report</i> is not configured by higher layers or in transmission modes 1-8 the UE shall derive the channel measurements for computing CQI based on CRS. For a UE in transmission mode 10, the UE shall derive the channel measurements for computing the CQI value reported in uplink subframe n and corresponding to a CSI process, based on only the non-zero power CSI-RS (defined in [3]) within a configured CSI-RS resource associated with the CSI process.
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		For a UE in transmission mode 10 , the UE shall derive the interference measurements for computing the CQI value reported in uplink subframe n and corresponding to a CSI process, based on only the zero power CSI-RS (defined in [3]) within the configured CSI-IM resource associated with the CSI process. If the UE in transmission mode 10 is configured by higher layers for CSI subframe sets $C_{\text{CSI},0}$ and $C_{\text{CSI},1}$ for the CSI process, the configured CSI-IM resource within the subframe subset belonging to the CSI reference resource is used to derive the interference measurement. <i>Id.</i> at 81. To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
1[d]	wherein: the CQI index table includes three CQI index values for QPSK modulation, three CQI index values for 16QAM modulation, five CQI index values for 64QAM modulation, and four CQI	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that the CQI index table includes three CQI index values for QPSK modulation, three CQI index values for 16QAM modulation, five CQI index values for 64QAM modulation, and four CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations:

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Claim Language		Exemplary Citations to TS 36.213		
index values for 256QAM modulation;	Table 7.2.3-1: 4-bit CQI Table			
	CQI index	modulation	code rate x 1024	efficiency
	0	out of range		
	1	QPSK	78	0.1523
	2	QPSK	120	0.2344
	3	QPSK	193	0.3770
	4	QPSK	308	0.6016
	5	QPSK	449	0.8770
	6	QPSK	602	1.1758
	7	16QAM	378	1.4766
	8	16QAM	490	1.9141
	9	16QAM	616	2.4063
	10	64QAM	466	2.7305
	11	64QAM	567	3.3223
	12	64QAM	666	3.9023
	13	64QAM	772	4.5234
	14	64QAM	873	5.1152
	15	64QAM	948	5.5547
	To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.			

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1[e]	one of the four CQI index values for 256QAM modulation is configured to have one code rate value that supports a same transmission efficiency as a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation; and	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses that one of the four CQI index values for 256QAM modulation is configured to have one code rate value that supports a same transmission efficiency as a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations: Table 7.2.3-1: 4-bit CQI Table <table border="1"> <thead> <tr> <th>CQI index</th><th>modulation</th><th>code rate x 1024</th><th>efficiency</th></tr> </thead> <tbody> <tr> <td>0</td><td colspan="3">out of range</td></tr> <tr> <td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr> <tr> <td>2</td><td>QPSK</td><td>120</td><td>0.2344</td></tr> <tr> <td>3</td><td>QPSK</td><td>193</td><td>0.3770</td></tr> <tr> <td>4</td><td>QPSK</td><td>308</td><td>0.6016</td></tr> <tr> <td>5</td><td>QPSK</td><td>449</td><td>0.8770</td></tr> <tr> <td>6</td><td>QPSK</td><td>602</td><td>1.1758</td></tr> <tr> <td>7</td><td>16QAM</td><td>378</td><td>1.4766</td></tr> <tr> <td>8</td><td>16QAM</td><td>490</td><td>1.9141</td></tr> <tr> <td>9</td><td>16QAM</td><td>616</td><td>2.4063</td></tr> <tr> <td>10</td><td>64QAM</td><td>466</td><td>2.7305</td></tr> <tr> <td>11</td><td>64QAM</td><td>567</td><td>3.3223</td></tr> <tr> <td>12</td><td>64QAM</td><td>666</td><td>3.9023</td></tr> <tr> <td>13</td><td>64QAM</td><td>772</td><td>4.5234</td></tr> <tr> <td>14</td><td>64QAM</td><td>873</td><td>5.1152</td></tr> <tr> <td>15</td><td>64QAM</td><td>948</td><td>5.5547</td></tr> </tbody> </table> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of		CQI index	modulation	code rate x 1024	efficiency	0	out of range			1	QPSK	78	0.1523	2	QPSK	120	0.2344	3	QPSK	193	0.3770	4	QPSK	308	0.6016	5	QPSK	449	0.8770	6	QPSK	602	1.1758	7	16QAM	378	1.4766	8	16QAM	490	1.9141	9	16QAM	616	2.4063	10	64QAM	466	2.7305	11	64QAM	567	3.3223	12	64QAM	666	3.9023	13	64QAM	772	4.5234	14	64QAM	873	5.1152	15	64QAM	948	5.5547
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		ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
1[f]	another of the four CQI index values for 256QAM modulation is configured to have another code rate value same as the code rate value having a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation; and	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that another of the four CQI index values for 256QAM modulation is configured to have another code rate value same as the code rate value having a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations:

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1[h]	the another code rate value of the another of the four CQI index values for 256QAM modulation is calculated to be 948 using “code rate×1024,” and	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses that the another code rate value of the another of the four CQI index values for 256QAM modulation is calculated to be 948 using “code rate×1024”. For example, TS 36.213 discloses this limitation based on the following exemplary citations: Table 7.2.3-1: 4-bit CQI Table <table><tr><th>CQI index</th><th>modulation</th><th>code rate x 1024</th><th>efficiency</th></tr><tr><td>0</td><td colspan="3">out of range</td></tr><tr><td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr><tr><td>2</td><td>QPSK</td><td>120</td><td>0.2344</td></tr><tr><td>3</td><td>QPSK</td><td>193</td><td>0.3770</td></tr><tr><td>4</td><td>QPSK</td><td>308</td><td>0.6016</td></tr><tr><td>5</td><td>QPSK</td><td>449</td><td>0.8770</td></tr><tr><td>6</td><td>QPSK</td><td>602</td><td>1.1758</td></tr><tr><td>7</td><td>16QAM</td><td>378</td><td>1.4766</td></tr><tr><td>8</td><td>16QAM</td><td>490</td><td>1.9141</td></tr><tr><td>9</td><td>16QAM</td><td>616</td><td>2.4063</td></tr><tr><td>10</td><td>64QAM</td><td>466</td><td>2.7305</td></tr><tr><td>11</td><td>64QAM</td><td>567</td><td>3.3223</td></tr><tr><td>12</td><td>64QAM</td><td>666</td><td>3.9023</td></tr><tr><td>13</td><td>64QAM</td><td>772</td><td>4.5234</td></tr><tr><td>14</td><td>64QAM</td><td>873</td><td>5.1152</td></tr><tr><td>15</td><td>64QAM</td><td>948</td><td>5.5547</td></tr></table> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with		CQI index	modulation	code rate x 1024	efficiency	0	out of range			1	QPSK	78	0.1523	2	QPSK	120	0.2344	3	QPSK	193	0.3770	4	QPSK	308	0.6016	5	QPSK	449	0.8770	6	QPSK	602	1.1758	7	16QAM	378	1.4766	8	16QAM	490	1.9141	9	16QAM	616	2.4063	10	64QAM	466	2.7305	11	64QAM	567	3.3223	12	64QAM	666	3.9023	13	64QAM	772	4.5234	14	64QAM	873	5.1152	15	64QAM	948	5.5547
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Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
1[i]	a different another code rate value of a different another of the four CQI index values for 256QAM modulation is calculated to be 797 using “code rate×1024. ”	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses that a different another code rate value of a different another of the four CQI index values for 256QAM modulation is calculated to be 797 using “code rate×1024.” For example, TS 36.213 discloses this limitation based on the following exemplary citations:

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213																																																																							
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2. Claim 2

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213																																																																																																																											
Claim Language		Exemplary Citations to TS 36.213																																																																																																																									
2	The method of claim 1, wherein the five CQI index values for 64QAM modulation, respectively, to have same difference within a predetermined error rate, as shown in a table below <table border="1"> <thead> <tr> <th>CQI index</th><th>modulation</th><th>code rate x 1024</th><th>efficiency</th></tr> </thead> <tbody> <tr> <td>0</td><td></td><td>out of range</td><td></td></tr> <tr> <td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr> <tr> <td>2</td><td>QPSK</td><td>193</td><td>0.3770</td></tr> <tr> <td>3</td><td>QPSK</td><td>449</td><td>0.8770</td></tr> <tr> <td>4</td><td>16QAM</td><td>378</td><td>1.4766</td></tr> <tr> <td>5</td><td>16QAM</td><td>490</td><td>1.9141</td></tr> <tr> <td>6</td><td>16QAM</td><td>616</td><td>2.4063</td></tr> <tr> <td>7</td><td>64QAM</td><td>466</td><td>2.7305</td></tr> <tr> <td>8</td><td>64QAM</td><td>567</td><td>3.3223</td></tr> <tr> <td>9</td><td>64QAM</td><td>666</td><td>3.9023</td></tr> <tr> <td>10</td><td>64QAM</td><td>772</td><td>4.5234</td></tr> <tr> <td>11</td><td>64QAM</td><td>873</td><td>5.1152</td></tr> </tbody> </table>	CQI index	modulation	code rate x 1024	efficiency	0		out of range		1	QPSK	78	0.1523	2	QPSK	193	0.3770	3	QPSK	449	0.8770	4	16QAM	378	1.4766	5	16QAM	490	1.9141	6	16QAM	616	2.4063	7	64QAM	466	2.7305	8	64QAM	567	3.3223	9	64QAM	666	3.9023	10	64QAM	772	4.5234	11	64QAM	873	5.1152	At least under Pegasus's apparent infringement theory, TS 36.213 discloses wherein the five CQI index values for 64QAM modulation, respectively, to have same difference within a predetermined error rate, as shown in a table below. For example, TS 36.213 discloses this limitation based on the following exemplary citations: Table 7.2.3-1: 4-bit CQI Table <table border="1"> <thead> <tr> <th>CQI index</th><th>modulation</th><th>code rate x 1024</th><th>efficiency</th></tr> </thead> <tbody> <tr> <td>0</td><td colspan="3">out of range</td></tr> <tr> <td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr> <tr> <td>2</td><td>QPSK</td><td>120</td><td>0.2344</td></tr> <tr> <td>3</td><td>QPSK</td><td>193</td><td>0.3770</td></tr> <tr> <td>4</td><td>QPSK</td><td>308</td><td>0.6016</td></tr> <tr> <td>5</td><td>QPSK</td><td>449</td><td>0.8770</td></tr> <tr> <td>6</td><td>QPSK</td><td>602</td><td>1.1758</td></tr> <tr> <td>7</td><td>16QAM</td><td>378</td><td>1.4766</td></tr> <tr> <td>8</td><td>16QAM</td><td>490</td><td>1.9141</td></tr> <tr> <td>9</td><td>16QAM</td><td>616</td><td>2.4063</td></tr> <tr> <td>10</td><td>64QAM</td><td>466</td><td>2.7305</td></tr> <tr> <td>11</td><td>64QAM</td><td>567</td><td>3.3223</td></tr> <tr> <td>12</td><td>64QAM</td><td>666</td><td>3.9023</td></tr> <tr> <td>13</td><td>64QAM</td><td>772</td><td>4.5234</td></tr> <tr> <td>14</td><td>64QAM</td><td>873</td><td>5.1152</td></tr> <tr> <td>15</td><td>64QAM</td><td>948</td><td>5.5547</td></tr> </tbody> </table> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with		CQI index	modulation	code rate x 1024	efficiency	0	out of range			1	QPSK	78	0.1523	2	QPSK	120	0.2344	3	QPSK	193	0.3770	4	QPSK	308	0.6016	5	QPSK	449	0.8770	6	QPSK	602	1.1758	7	16QAM	378	1.4766	8	16QAM	490	1.9141	9	16QAM	616	2.4063	10	64QAM	466	2.7305	11	64QAM	567	3.3223	12	64QAM	666	3.9023	13	64QAM	772	4.5234	14	64QAM	873	5.1152	15	64QAM	948	5.5547
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Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.

3. Claim 3

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
3[pre]	A method for receiving channel state information by a base station, the method comprising:	To the extent the preamble is limiting, at least under Pegasus's apparent infringement theory, TS 36.213 discloses method for receiving channel state information by a base station. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[pre], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
3[a]	creating a reference signal for measuring channel quality;	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses creating a reference signal for measuring channel quality. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[a], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
3[b]	transmitting the reference signal to a User Equipment (UE); and	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses transmitting the reference signal to a User Equipment (UE). For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[b], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
3[c]	receiving channel state information including a channel quality indicator (CQI) index selected from a predetermined CQI index table including CQI index values for 256 quadrature amplitude modulation (QAM) modulation, based on a measurement result of the channel quality, from the User Equipment,	At least under Pegasus's apparent infringement theory, TS 36.213 discloses receiving channel state information including a channel quality indicator (CQI) index selected from a predetermined CQI index table including CQI index values for 256 quadrature amplitude modulation (QAM) modulation, based on a measurement result of the channel quality, from the User Equipment. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[c], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
3[d]	wherein: the CQI index table includes three CQI index values for QPSK modulation, three CQI index values for 16QAM modulation, five CQI index values for 64QAM modulation, and four CQI index values for 256QAM modulation;	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that the CQI index table includes three CQI index values for QPSK modulation, three CQI index values for 16QAM modulation, five CQI index values for 64QAM modulation, and four CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[d], supra.</i>

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
3[e]	one of the four CQI index values for 256QAM modulation is configured to have one code rate value that supports a same transmission efficiency as a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation; and	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that one of the four CQI index values for 256QAM modulation is configured to have one code rate value that supports a same transmission efficiency as a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[e], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
3[f]	another of the four CQI index values for 256QAM modulation is configured to have another code rate value same as the code rate value having a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation; and	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that another of the four CQI index values for 256QAM modulation is configured to have another code rate value same as the code rate value having a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[f], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
3[g]	wherein: the one code rate value of the one of the four CQI index values for 256QAM modulation is calculated to be 711 using "code rate $\times$ 1024,"	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that the one code rate value of the one of the four CQI index values for 256QAM modulation is calculated to be 711 using "code rate$\times$1024". For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[g], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
3[h]	the another code rate value of the another of the four CQI index values for 256QAM modulation is calculated to be 948 using “code rate×1024,” and	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses that the another code rate value of the another of the four CQI index values for 256QAM modulation is calculated to be 948 using “code rate×1024”. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[h], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
3[i]	a different another code rate value of a different another of the four CQI index values for 256QAM modulation is calculated to be 797 using “code rate×1024.”	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses that a different another code rate value of a different another of the four CQI index values for 256QAM modulation is calculated to be 797 using “code rate×1024.” For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[i], supra.</i>

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.

4. Claim 4

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213																																																							
Claim Language		Exemplary Citations to TS 36.213																																																					
4	The method of claim 2, wherein the five CQI index values for 64QAM modulation, respectively, to have same difference within a predetermined error rate, as shown in a table below <table><tr><th>CQI index</th><th>modulation</th><th>code rate x 1024</th><th>efficiency</th></tr><tr><td>0</td><td></td><td>out of range</td><td></td></tr><tr><td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr><tr><td>2</td><td>QPSK</td><td>193</td><td>0.3770</td></tr><tr><td>3</td><td>QPSK</td><td>449</td><td>0.8770</td></tr><tr><td>4</td><td>16QAM</td><td>378</td><td>1.4766</td></tr><tr><td>5</td><td>16QAM</td><td>490</td><td>1.9141</td></tr><tr><td>6</td><td>16QAM</td><td>616</td><td>2.4063</td></tr><tr><td>7</td><td>64QAM</td><td>466</td><td>2.7305</td></tr><tr><td>8</td><td>64QAM</td><td>567</td><td>3.3223</td></tr><tr><td>9</td><td>64QAM</td><td>666</td><td>3.9023</td></tr><tr><td>10</td><td>64QAM</td><td>772</td><td>4.5234</td></tr><tr><td>11</td><td>64QAM</td><td>873</td><td>5.1152</td></tr></table>	CQI index	modulation	code rate x 1024	efficiency	0		out of range		1	QPSK	78	0.1523	2	QPSK	193	0.3770	3	QPSK	449	0.8770	4	16QAM	378	1.4766	5	16QAM	490	1.9141	6	16QAM	616	2.4063	7	64QAM	466	2.7305	8	64QAM	567	3.3223	9	64QAM	666	3.9023	10	64QAM	772	4.5234	11	64QAM	873	5.1152	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses wherein the five CQI index values for 64QAM modulation, respectively, to have same difference within a predetermined error rate, as shown in a table below. For example, TS 36.213 discloses this limitation based on the following exemplary citations:	
CQI index	modulation	code rate x 1024	efficiency																																																				
0		out of range																																																					
1	QPSK	78	0.1523																																																				
2	QPSK	193	0.3770																																																				
3	QPSK	449	0.8770																																																				
4	16QAM	378	1.4766																																																				
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6	16QAM	616	2.4063																																																				
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8	64QAM	567	3.3223																																																				
9	64QAM	666	3.9023																																																				
10	64QAM	772	4.5234																																																				
11	64QAM	873	5.1152																																																				

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213																																																																							
Claim Language		Exemplary Citations to TS 36.213																																																																					
		Table 7.2.3-1: 4-bit CQI Table																																																																					
		<table><tr><th>CQI index</th><th>modulation</th><th>code rate x 1024</th><th>efficiency</th></tr><tr><td>0</td><td colspan="3">out of range</td></tr><tr><td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr><tr><td>2</td><td>QPSK</td><td>120</td><td>0.2344</td></tr><tr><td>3</td><td>QPSK</td><td>193</td><td>0.3770</td></tr><tr><td>4</td><td>QPSK</td><td>308</td><td>0.6016</td></tr><tr><td>5</td><td>QPSK</td><td>449</td><td>0.8770</td></tr><tr><td>6</td><td>QPSK</td><td>602</td><td>1.1758</td></tr><tr><td>7</td><td>16QAM</td><td>378</td><td>1.4766</td></tr><tr><td>8</td><td>16QAM</td><td>490</td><td>1.9141</td></tr><tr><td>9</td><td>16QAM</td><td>616</td><td>2.4063</td></tr><tr><td>10</td><td>64QAM</td><td>466</td><td>2.7305</td></tr><tr><td>11</td><td>64QAM</td><td>567</td><td>3.3223</td></tr><tr><td>12</td><td>64QAM</td><td>666</td><td>3.9023</td></tr><tr><td>13</td><td>64QAM</td><td>772</td><td>4.5234</td></tr><tr><td>14</td><td>64QAM</td><td>873</td><td>5.1152</td></tr><tr><td>15</td><td>64QAM</td><td>948</td><td>5.5547</td></tr></table>	CQI index	modulation	code rate x 1024	efficiency	0	out of range			1	QPSK	78	0.1523	2	QPSK	120	0.2344	3	QPSK	193	0.3770	4	QPSK	308	0.6016	5	QPSK	449	0.8770	6	QPSK	602	1.1758	7	16QAM	378	1.4766	8	16QAM	490	1.9141	9	16QAM	616	2.4063	10	64QAM	466	2.7305	11	64QAM	567	3.3223	12	64QAM	666	3.9023	13	64QAM	772	4.5234	14	64QAM	873	5.1152	15	64QAM	948	5.5547	
CQI index	modulation	code rate x 1024	efficiency																																																																				
0	out of range																																																																						
1	QPSK	78	0.1523																																																																				
2	QPSK	120	0.2344																																																																				
3	QPSK	193	0.3770																																																																				
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11	64QAM	567	3.3223																																																																				
12	64QAM	666	3.9023																																																																				
13	64QAM	772	4.5234																																																																				
14	64QAM	873	5.1152																																																																				
15	64QAM	948	5.5547																																																																				
		To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.																																																																					

5. Claim 5

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
5[pre]	A User Equipment (UE) for transmitting channel state information, comprising:	To the extent the preamble is limiting, at least under Pegasus’s apparent infringement theory, TS 36.213 discloses a User Equipment (UE) for transmitting channel state information. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[pre], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[a]	a receiver configured to receive a reference signal for measuring channel quality from a base station;	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses a receiver configured to receive a reference signal for measuring channel quality from a base station. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[a], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[b]	a controller configured to measure the channel quality based on the reference signal, and select a channel quality indicator (CQI) index value from a predetermined CQI index table including CQI index values for 256 quadrature amplitude modulation (QAM) modulation, based on the measurement result of the channel quality; and	At least under Pegasus's apparent infringement theory, TS 36.213 discloses a controller configured to measure the channel quality based on the reference signal, and select a channel quality indicator (CQI) index value from a predetermined CQI index table including CQI index values for 256 quadrature amplitude modulation (QAM) modulation, based on the measurement result of the channel quality. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[b], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[c]	a transmitter configured to transmit channel state information including the	At least under Pegasus's apparent infringement theory, TS 36.213 discloses a transmitter configured to transmit channel state information including the selected

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
	selected CQI index value to the base station,	CQI index value to the base station. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[c], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[d]	wherein: the CQI index table includes three CQI index values for QPSK modulation, three CQI index values for 16QAM modulation, five CQI index values for 64QAM modulation, and four CQI index values for 256QAM modulation;	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that the CQI index table includes three CQI index values for QPSK modulation, three CQI index values for 16QAM modulation, five CQI index values for 64QAM modulation, and four CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[d], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[e]	one of the four CQI index values for 256QAM modulation is configured to have one code rate value that supports a same transmission efficiency as a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation; and	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that one of the four CQI index values for 256QAM modulation is configured to have one code rate value that supports a same transmission efficiency as a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[e] supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[f]	another of the four CQI index values for 256QAM modulation is configured to have another code rate value same as the code rate value having a maximum transmission efficiency of a CQI index table that excludes	At least under Pegasus's apparent infringement theory, TS 36.213 discloses that another of the four CQI index values for 256QAM modulation is configured to have another code rate value same as the code rate value having a maximum transmission efficiency of a CQI index table that excludes CQI index values for 256QAM modulation. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[f], supra.</i>

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
	CQI index values for 256QAM modulation; and wherein:	To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[g]	wherein: the one code rate value of the one of the four CQI index values for 256QAM modulation is calculated to be 711 using “code rate $\times$ 1024,”	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses that the one code rate value of the one of the four CQI index values for 256QAM modulation is calculated to be 711 using “code rate$\times$1024”. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[g], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[h]	the another code rate value of the another of the four CQI index values for 256QAM	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses that the another code rate value of the another of the four CQI index values for 256QAM

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
	modulation is calculated to be 948 using “code rate×1024,” and	modulation is calculated to be 948 using “code rate×1024”. For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[h], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.
5[i]	a different another code rate value of a different another of the four CQI index values for 256QAM modulation is calculated to be 797 using “code rate×1024.”	At least under Pegasus’s apparent infringement theory, TS 36.213 discloses that a different another code rate value of a different another of the four CQI index values for 256QAM modulation is calculated to be 797 using “code rate×1024.” For example, TS 36.213 discloses this limitation based on the following exemplary citations: <i>See 1[i], supra.</i> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213		
Claim Language		Exemplary Citations to TS 36.213
		elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.

6. Claim 6

Invalidity of U.S. Patent 10,009,161 in view of TS 36.213																																																							
Claim Language		Exemplary Citations to TS 36.213																																																					
6	The User Equipment of claim 5, wherein and five CQI index values for 64QAM modulation, respectively, to have a same difference within a predetermined error rate, as shown in a table below <table> <tr> <th>CQI index</th><th>modulation</th><th>code rate $\times 1024$</th><th>efficiency</th></tr> <tr> <td>0</td><td></td><td>out of range</td><td></td></tr> <tr> <td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr> <tr> <td>2</td><td>QPSK</td><td>193</td><td>0.3770</td></tr> <tr> <td>3</td><td>QPSK</td><td>449</td><td>0.8770</td></tr> <tr> <td>4</td><td>16QAM</td><td>378</td><td>1.4766</td></tr> <tr> <td>5</td><td>16QAM</td><td>490</td><td>1.9141</td></tr> <tr> <td>6</td><td>16QAM</td><td>616</td><td>2.4063</td></tr> <tr> <td>7</td><td>64QAM</td><td>466</td><td>2.7305</td></tr> <tr> <td>8</td><td>64QAM</td><td>567</td><td>3.3223</td></tr> <tr> <td>9</td><td>64QAM</td><td>666</td><td>3.9023</td></tr> <tr> <td>10</td><td>64QAM</td><td>772</td><td>4.5234</td></tr> <tr> <td>11</td><td>64QAM</td><td>873</td><td>5.1152</td></tr> </table>	CQI index	modulation	code rate $\times 1024$	efficiency	0		out of range		1	QPSK	78	0.1523	2	QPSK	193	0.3770	3	QPSK	449	0.8770	4	16QAM	378	1.4766	5	16QAM	490	1.9141	6	16QAM	616	2.4063	7	64QAM	466	2.7305	8	64QAM	567	3.3223	9	64QAM	666	3.9023	10	64QAM	772	4.5234	11	64QAM	873	5.1152	At least under Pegasus's apparent infringement theory, TS 36.213 discloses wherein and five CQI index values for 64QAM modulation, respectively, to have a same difference within a predetermined error rate, as shown in a table below. For example, TS 36.213 discloses this limitation based on the following exemplary citations:	
CQI index	modulation	code rate $\times 1024$	efficiency																																																				
0		out of range																																																					
1	QPSK	78	0.1523																																																				
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3	QPSK	449	0.8770																																																				
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6	16QAM	616	2.4063																																																				
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Invalidity of U.S. Patent 10,009,161 in view of TS 36.213																																																																							
Claim Language		Exemplary Citations to TS 36.213																																																																					
		Table 7.2.3-1: 4-bit CQI Table <table><tr><th>CQI index</th><th>modulation</th><th>code rate x 1024</th><th>efficiency</th></tr><tr><td>0</td><td colspan="3">out of range</td></tr><tr><td>1</td><td>QPSK</td><td>78</td><td>0.1523</td></tr><tr><td>2</td><td>QPSK</td><td>120</td><td>0.2344</td></tr><tr><td>3</td><td>QPSK</td><td>193</td><td>0.3770</td></tr><tr><td>4</td><td>QPSK</td><td>308</td><td>0.6016</td></tr><tr><td>5</td><td>QPSK</td><td>449</td><td>0.8770</td></tr><tr><td>6</td><td>QPSK</td><td>602</td><td>1.1758</td></tr><tr><td>7</td><td>16QAM</td><td>378</td><td>1.4766</td></tr><tr><td>8</td><td>16QAM</td><td>490</td><td>1.9141</td></tr><tr><td>9</td><td>16QAM</td><td>616</td><td>2.4063</td></tr><tr><td>10</td><td>64QAM</td><td>466</td><td>2.7305</td></tr><tr><td>11</td><td>64QAM</td><td>567</td><td>3.3223</td></tr><tr><td>12</td><td>64QAM</td><td>666</td><td>3.9023</td></tr><tr><td>13</td><td>64QAM</td><td>772</td><td>4.5234</td></tr><tr><td>14</td><td>64QAM</td><td>873</td><td>5.1152</td></tr><tr><td>15</td><td>64QAM</td><td>948</td><td>5.5547</td></tr></table> To the extent it is found that TS 36.213 does not expressly disclose this limitation, the limitation is inherent. Moreover, to the extent it is found that TS 36.213 does not anticipate this claim, TS 36.213 renders it obvious, either alone, in combination with the knowledge of a person of ordinary skill in the art, and/or in combination with other prior art references identified in the cover pleading or herein. A person of ordinary skill in the art would have been motivated to combine TS 36.213 with any of the other prior art references identified in the cover pleading or herein with a reasonable expectation of success because each of these references contains familiar elements within the same field of endeavor to address the same known problems, according to known methods which would yield predictable results.		CQI index	modulation	code rate x 1024	efficiency	0	out of range			1	QPSK	78	0.1523	2	QPSK	120	0.2344	3	QPSK	193	0.3770	4	QPSK	308	0.6016	5	QPSK	449	0.8770	6	QPSK	602	1.1758	7	16QAM	378	1.4766	8	16QAM	490	1.9141	9	16QAM	616	2.4063	10	64QAM	466	2.7305	11	64QAM	567	3.3223	12	64QAM	666	3.9023	13	64QAM	772	4.5234	14	64QAM	873	5.1152	15	64QAM	948	5.5547
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