

Exhibit 1006

EXHIBIT D

Ex. 1006 - TCL Comm Tech Holdings Ltd.

TCL Comm Tech Holdings Ltd. v. Mitsubishi Electric Corp. - IPR2023-00997

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PLAINTIFFS' PRELIMINARY INFRINGEMENT CONTENTIONS
Exhibit D

U.S. Patent No. US 10,200,976 – TCL

Claim 2

Plaintiffs Mitsubishi Electric Corporation, and Sisvel International S.A. (collectively, “Plaintiffs”) provide evidence of infringement of at least claim 2 of U.S. Patent No. 10,200,976 (hereinafter “the ’976 patent”) by TCL Communication Technology Holdings Limited, TCT Mobile International Limited, TCT Mobile, Inc., TCT Mobile (US) Inc., and TCT Mobile (US) Holdings Inc. (collectively “TCL”). In support thereof, Plaintiffs provide the following claim chart.

“Accused Instrumentalities” as used herein refers to mobile devices and data terminals made, used, sold and offered for sale, provided, and/or caused to be used, now and within the past six years, **which are capable of communicating over LTE (Long Term Evolution)** wireless communication networks within the United States. The LTE standard was developed by the 3GPP (3rd Generation Partnership Project), as specified in its Release 8 document series, along with minor enhancements described in Release 9. LTE is sometimes referred to as “3.95G” or “4G LTE” or “Advanced 4G”. Each of the Accused Instrumentalities is marketed by Defendant to be LTE-compatible, i.e., compliant with the LTE standard, either expressly or by reference to compatibility with 4G networks, which also requires such devices to be compatible with the LTE standard. Examples of the Accused Instrumentalities are included in Exhibit A, filed herewith. The following claim chart demonstrates TCL’s infringement by comparing each element of claim 2 to corresponding components, aspects, and/or features of the LTE standard. This claim chart is not intended to constitute an expert report on infringement. This claim chart includes information provided by way of example, and not by way of limitation.

The identification of Accused Instrumentalities based on Defendant’s public statements regarding compatibility/compliance with the LTE or 4G networks is based only upon information from publicly available resources regarding the Accused Instrumentalities, as TCL has not yet provided any non-public information. An analysis of TCL’s (or other third parties’) technical documentation may assist in fully identify all infringing devices made, use, sold, offered for sale or provided by TCL. Accordingly, Plaintiffs reserve the right to supplement its identification of Accused Instrumentalities once such information is made available to Plaintiffs. Furthermore, Plaintiffs reserve the right to revise this infringement analysis, as appropriate, upon issuance of a court order construing any terms recited in the asserted claims.

Plaintiffs provide this evidence of infringement and related analysis without the benefit of claim construction or expert reports or discovery. Plaintiffs reserve the right to supplement, amend or otherwise modify this analysis and/or evidence based on any such claim construction or expert reports or discovery.

Unless otherwise noted, Plaintiffs contend that TCL directly infringes the ’976 patent in violation of 35 U.S.C. § 271 by selling, offering to sell, making, using, and/or importing the Accused Instrumentalities. The following exemplary analysis demonstrates that infringement. Unless otherwise noted, Plaintiffs further contend that the evidence below supports a finding of indirect infringement under 35 U.S.C. §§ 271(b) and/or (c), in conjunction with other evidence of liability under one or more of those subsections. TCL makes, uses, sells, imports, or offers for sale in the United States, or has made, used, sold, imported, or offered for sale in the past, without authority, or induces others to make, use, sell, import, or offer for sale in the United States, or has induced others to make, use, sell, import, or offer for sale in the past, without authority products, equipment, or services that infringe claim 2 of the ’976 patent, including without limitation, the Accused Instrumentalities.

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PLAINTIFFS' PRELIMINARY INFRINGEMENT CONTENTIONS

Unless otherwise noted, Plaintiffs believe and contend that each element of each claim asserted herein is literally met through TCL's provision of the Accused Instrumentalities. However, to the extent that TCL attempts to allege that any asserted claim element is not literally met, Plaintiffs believe and contend that such elements are met under the doctrine of equivalents. More specifically, in its investigation and analysis of the Accused Instrumentalities, Plaintiffs did not identify any substantial differences between the elements of the patent claims and the corresponding features of the Accused Instrumentalities, as set forth herein. In each instance, the identified feature of the Accused Instrumentalities performs at least substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim element.

To the extent the chart of an asserted claim relies on evidence about certain specifically-identified Accused Instrumentalities, Plaintiffs assert that, on information and belief, any similarly-functioning instrumentalities also infringes the charted claim. Plaintiffs reserve the right to amend this infringement analysis based on other products made, used, sold, imported, or offered for sale by TCL. Plaintiffs also reserve the right to amend this infringement analysis by citing other claims of the '976 patent, not listed in the claim chart, that are infringed by the Accused Instrumentalities. Plaintiffs further reserve the right to amend this infringement analysis by adding, subtracting, or otherwise modifying content in the "Accused Instrumentalities" column of each chart.

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
A communication terminal device performing radio communication with a base station device,	The Accused Instrumentalities are communication terminal devices configured to perform radio communication with a base station device. As demonstrated herein, each and every aspect of this element is disclosed by a relevant section of the standard Specification and is required for practice of at least a portion of the standard. Specifically, the relevant Sections of the Specification are as follows: 3GPP TS 36.101 v11.3.0: 1 Scope The present document establishes the minimum RF characteristics and minimum performance requirements for E-UTRA User Equipment (UE). ⋮ 3 Definitions, symbols and abbreviations ⋮ 3.3 Abbreviations ⋮ BS Base Station CA Carrier Aggregation CA_X CA for band X where X is the applicable E-UTRA operating band CA_X-Y CA for band X and Band Y where X and Y are the applicable E-UTRA operating band ⋮ DL Downlink ⋮ E-UTRA Evolved UMTS Terrestrial Radio Access EUTRAN Evolved UMTS Terrestrial Radio Access Network ⋮ UE User Equipment UL Uplink ⋮ UMTS Universal Mobile Telecommunication System UTRA Universal Terrestrial Radio Access

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	UTRAN Universal Terrestrial Radio Access Network Relevant Sections of 3GPP TS 36.300 v11.2.0: 4 Overall architecture The E-UTRAN consists of eNBs, providing the E-UTRA user plane (PDCP/RLC/MAC/PHY) and control plane (RRC) protocol terminations towards the UE. The eNBs are interconnected with each other by means of the X2 interface. The eNBs are also connected by means of the S1 interface to the EPC (Evolved Packet Core), more specifically to the MME (Mobility Management Entity) by means of the S1-MME and to the Serving Gateway (S-GW) by means of the S1-U. The S1 interface supports a many-to-many relation between MMEs / Serving Gateways and eNBs. Comparison to the relevant 3GPP TS 36 series standard sections: As noted in the definitions of TS 36.101, Section 3, the standard is concerned with a (tele)communication system based on radio communications (see, e.g., definitions of E-UTRA and UMTS). As noted in Section 4 of TS 36.300, the eNBs (which are base stations) provide “protocol terminations,” including physical layer (“PHY”) with the UEs (which are communication terminals), and thus are in radio communications with the UEs (because the physical layer is a layer for radio communications).
wherein the communication terminal device performs uplink communication using an associated cell configured by the base station to include a resource for uplink and a resource for downlink, the resource for uplink being allocated to the uplink communication to the base station device, the resource for	The Accused Instrumentalities are communication terminal devices configured to perform radio communication with a base station device wherein the communication terminal device performs uplink communication using an associated cell configured by the base station to include a resource for uplink and a resource for downlink, the resource for uplink being allocated to the uplink communication to the base station device, the resource for downlink being allocated to the downlink communication from the base station device. Specifically, the Accused Instrumentalities satisfy these elements because they must be compliant with the following Specifications:

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
downlink being allocated to the downlink communication from the base station device, and	The following portions of TS 36.331 establish that the EUTRAN (the network), via the eNB (base station) sends frequency information for the primary cell (PCell) associated with the UE to the UE, which allocates uplink and downlink frequency bands from Table 5.5-1 of TS 36.101. The definitions of “uplink” and “downlink” from TS 36.101, Section 3 establish their use, as stated in the claim language. Moreover, the terminals are assigned Resource Blocks (RBs) for uplink and downlink communication. The resource allocation is carried by the Physical Downlink Control Channel (PDCCH). See 3GPP TS 36.211, Sections 6.23 and 6.8. <u>Additional Relevant Sections of TS 36.331 v11.2.0:</u> 3.2 Abbreviations : PCell Primary Cell : SCell Secondary Cell : 4 General : 4.2 Architecture 4.2.1 UE states and state transitions including inter RAT A UE is in RRC_CONNECTED when an RRC connection has been established. If this is not the case, i.e. no RRC connection is established, the UE is in RRC_IDLE state. The RRC states can further be characterised as follows: : - RRC_CONNECTED: - Transfer of unicast data to/from UE. - At lower layers, the UE may be configured with a UE specific DRX.

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	 - For UEs supporting CA, use of one or more SCells, aggregated with the PCell, for increased bandwidth; - Network controlled mobility, i.e. handover and cell change order with optional network assistance (NACC) to GERAN; - The UE: - Monitors a Paging channel and/ or System Information Block Type 1 contents to detect system information change, for ETWS capable UEs, ETWS notification, and for CMAS capable UEs, CMAS notification; - Monitors control channels associated with the shared data channel to determine if data is scheduled for it; - Provides channel quality and feedback information; - Performs neighbouring cell measurements and measurement reporting; - Acquires system information. ⋮ 5 Procedures 5.1 General ⋮ 5.1.2 General requirements The UE shall: 1> process the received messages in order of reception by RRC, i.e. the processing of a message shall be completed before starting the processing of a subsequent message;

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	NOTE 1: E-UTRAN may initiate a subsequent procedure prior to receiving the UE's response of a previously initiated procedure. 1> within a sub-clause execute the steps according to the order specified in the procedural description; 1> consider the term 'radio bearer' (RB) to cover SRBs and DRBs but not MRBs unless explicitly stated otherwise; 1> set the <i>rrc-TransactionIdentifier</i> in the response message, if included, to the same value as included in the message received from E-UTRAN that triggered the response message; 1> upon receiving a choice value set to <i>setup</i>: 2> apply the corresponding received configuration and start using the associated resources, unless explicitly specified otherwise; 1> upon receiving a choice value set to <i>release</i>: 2> clear the corresponding configuration and stop using the associated resources; 1> upon handover to E-UTRA; or 1> upon receiving an <i>RRCCConnectionReconfiguration</i> message including the <i>fullConfig</i>: 2> apply the Conditions in the ASN.1 for inclusion of the fields for the DRB/PDCP/RLC setup during the reconfiguration of the DRBs included in the <i>drb-ToAddModList</i>;

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	NOTE 2: At each point in time, the UE keeps a single value for each field except for during handover when the UE temporarily stores the previous configuration so it can revert back upon handover failure. In other words: when the UE reconfigures a field, the existing value is released except for during handover. NOTE 3: Although not explicitly stated, the UE initially considers all functionality to be deactivated/ released until it is explicitly stated that the functionality is setup/ activated. Correspondingly, the UE initially considers lists to be empty e.g. the list of radio bearers, the list of measurements. 5.2 System information 5.2.1 Introduction 5.2.1.1 General System information is divided into the <i>MasterInformationBlock</i> (MIB) and a number of <i>SystemInformationBlocks</i> (SIBs). The MIB includes a limited number of most essential and most frequently transmitted parameters that are needed to acquire other information from the cell, and is transmitted on BCH. SIBs other than <i>SystemInformationBlockType1</i> are carried in <i>SystemInformation</i> (SI) messages and mapping of SIBs to SI messages is flexibly configurable by <i>schedulingInfoList</i> included in <i>SystemInformationBlockType1</i>, with restrictions that: each SIB is contained only in a single SI message, only SIBs having the same scheduling requirement (periodicity) can be mapped to the same SI message, and <i>SystemInformationBlockType2</i> is always mapped to the SI message that corresponds to the first entry in the list of SI messages in <i>schedulingInfoList</i>. There may be multiple SI messages transmitted with the same periodicity. <i>SystemInformationBlockType1</i> and all SI messages are transmitted on DL-SCH. NOTE 1: The physical layer imposes a limit to the maximum size a SIB can take. When DCI format 1C is used the maximum allowed by the physical layer is 1736 bits (217

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	bytes) while for format 1A the limit is 2216 bits (277 bytes), see TS 36.212 [22] and TS 36.213 [23]. In addition to system information broadcast the E-UTRAN may provide the same <i>SystemInformationBlockType1</i> via dedicated signalling in the <i>RRCConnectionReconfiguration</i> message. The UE applies the system information acquisition and change monitoring procedures for the PCell only. For an SCell, E-UTRAN provides, via dedicated signalling, all system information relevant for operation in RRC_CONNECTED when adding the SCell. Upon change of the relevant system information of a configured SCell, E-UTRAN releases and subsequently adds the concerned SCell, which may be done with a single <i>RRCConnectionReconfiguration</i> message. NOTE 2: E-UTRAN may configure via dedicated signalling different parameter values than the ones broadcast in the concerned SCell. An RN configured with an RN subframe configuration does not need to apply the system information acquisition and change monitoring procedures. Upon change of any system information relevant to an RN, E-UTRAN provides the system information blocks containing the relevant system information to an RN configured with an RN subframe configuration via dedicated signalling using the <i>RNReconfiguration</i> message. For RNs configured with an RN subframe configuration, the system information contained in this dedicated signalling replaces any corresponding stored system information and takes precedence over any corresponding system information acquired through the system information acquisition procedure. The dedicated system information remains valid until overridden. NOTE 3: E-UTRAN may configure an RN, via dedicated signalling, with different parameter values than the ones broadcast in the concerned cell. ⋮

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	5.2.2 System information acquisition 5.2.2.1 General <pre>sequenceDiagram participant UE participant E-UTRAN E-UTRAN->>UE: MasterInformationBlock E-UTRAN->>UE: SystemInformationBlockType1 E-UTRAN->>UE: SystemInformation</pre> Figure 5.2.2.1-1: System information acquisition, normal The UE applies the system information acquisition procedure to acquire the AS- and NAS-system information that is broadcasted by the E-UTRAN. The procedure applies to UEs in RRC_IDLE and UEs in RRC_CONNECTED. ⋮ 6 Protocol data units, formats and parameters (tabular & ASN.1) ⋮ 6.2 RRC messages ⋮ 6.2.1 General message structure ⋮ — <i>SystemInformationBlockType1</i> <i>SystemInformationBlockType1</i> contains information relevant when evaluating if a UE is allowed to access a cell and defines the scheduling of other system information. Signalling radio bearer: N/A

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant																																								
	RLC-SAP: TM Logical channel: BCCH Direction: E-UTRAN to UE <i>SystemInformationBlockType1 message</i> -- ASN1START <table border="0"> <tr> <td>SystemInformationBlockType1 ::=</td><td>SEQUENCE {</td></tr> <tr> <td> cellAccessRelatedInfo</td><td> SEQUENCE {</td></tr> <tr> <td> plmn-IdentityList</td><td> PLMN-IdentityList,</td></tr> <tr> <td> trackingAreaCode</td><td> TrackingAreaCode,</td></tr> <tr> <td> cellIdentity</td><td> CellIdentity,</td></tr> <tr> <td> cellBarred</td><td> ENUMERATED</td></tr> <tr> <td> {barred, notBarred},</td><td></td></tr> <tr> <td> intraFreqReselection</td><td> ENUMERATED {allowed,</td></tr> <tr> <td>notAllowed},</td><td></td></tr> <tr> <td> csg-Indication</td><td> BOOLEAN,</td></tr> <tr> <td> csg-Identity</td><td> CSG-Identity</td></tr> <tr> <td> OPTIONAL -- Need OR</td><td></td></tr> <tr> <td> },</td><td></td></tr> <tr> <td> cellSelectionInfo</td><td> SEQUENCE {</td></tr> <tr> <td> q-RxLevMin</td><td> Q-RxLevMin,</td></tr> <tr> <td> q-RxLevMinOffset</td><td> INTEGER (1..8)</td></tr> <tr> <td> OPTIONAL -- Need OP</td><td></td></tr> <tr> <td> },</td><td></td></tr> <tr> <td> p-Max</td><td> P-Max</td></tr> <tr> <td>OPTIONAL,</td><td>-- Need OP</td></tr> </table>	SystemInformationBlockType1 ::=	SEQUENCE {	cellAccessRelatedInfo	SEQUENCE {	plmn-IdentityList	PLMN-IdentityList,	trackingAreaCode	TrackingAreaCode,	cellIdentity	CellIdentity,	cellBarred	ENUMERATED	{barred, notBarred},		intraFreqReselection	ENUMERATED {allowed,	notAllowed},		csg-Indication	BOOLEAN,	csg-Identity	CSG-Identity	OPTIONAL -- Need OR		},		cellSelectionInfo	SEQUENCE {	q-RxLevMin	Q-RxLevMin,	q-RxLevMinOffset	INTEGER (1..8)	OPTIONAL -- Need OP		},		p-Max	P-Max	OPTIONAL,	-- Need OP
SystemInformationBlockType1 ::=	SEQUENCE {																																								
cellAccessRelatedInfo	SEQUENCE {																																								
plmn-IdentityList	PLMN-IdentityList,																																								
trackingAreaCode	TrackingAreaCode,																																								
cellIdentity	CellIdentity,																																								
cellBarred	ENUMERATED																																								
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cellSelectionInfo	SEQUENCE {																																								
q-RxLevMin	Q-RxLevMin,																																								
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p-Max	P-Max																																								
OPTIONAL,	-- Need OP																																								

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	freqBandIndicator schedulingInfoList tdd-Config FreqBandIndicator, SchedulingInfoList, TDD-Config OPTIONAL, -- Cond TDD si-WindowLength ENUMERATED { ms1, ms2, ms5, ms10, ms15, ms20, ms40}, systemInfoValueTag nonCriticalExtension INTEGER (0..31), SystemInformationBlockType1-v890- IEs OPTIONAL } SystemInformationBlockType1-v890-IEs::= SEQUENCE { lateNonCriticalExtension OCTET STRING (CONTAINING SystemInformationBlockType1-v8h0-IEs) OPTIONAL, -- Need OP nonCriticalExtension SystemInformationBlockType1-v920- IEs OPTIONAL } SystemInformationBlockType1-v8h0-IEs ::= SEQUENCE { multiBandInfoList MultiBandInfoList OPTIONAL, -- Need OR nonCriticalExtension SEQUENCE {} OPTIONAL -- Need OP } SystemInformationBlockType1-v920-IEs ::= SEQUENCE { ims-EmergencySupport-r9 ENUMERATED {true} OPTIONAL, -- Need OR

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	cellSelectionInfo-v920 OPTIONAL, -- Cond RSRQ nonCriticalExtension OPTIONAL IEs } CellSelectionInfo-v920 SystemInformationBlockType1-v11xy- SystemInformationBlockType1-v11xy-IEs ::= tdd-Config-v11xy OPTIONAL, -- Cond TDD-OR nonCriticalExtension OPTIONAL -- Need OP } SEQUENCE { TDD-Config-v11xy SEQUENCE {} PLMN-IdentityList ::= PLMN-IdentityInfo SEQUENCE (SIZE (1..6)) OF PLMN-IdentityInfo ::= plmn-Identity cellReservedForOperatorUse notReserved} } SEQUENCE { PLMN-Identity, ENUMERATED {reserved, SchedulingInfoList ::= SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo SchedulingInfo ::= SEQUENCE { si-Periodicity rf32, rf64, rf128, rf256, rf512}, sib-MappingInfo } ENUMERATED { rf8, rf16, SIB-MappingInfo

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	SIB-MappingInfo ::= SEQUENCE (SIZE (0..maxSIB-1)) OF SIB-Type SIB-Type ::= ENUMERATED { sibType3, sibType4, sibType5, sibType6, sibType7, sibType8, sibType9, sibType10, sibType11, sibType12-v920, sibType13-v920, sibType14-v11xy, sibType15-v11x0, sibType16-v11x0, spare2, spare1, ...} CellSelectionInfo-v920 ::= SEQUENCE { q-QualMin-r9 Q-QualMin-r9, q-QualMinOffset-r9 INTEGER (1..8) OPTIONAL -- Need OP } -- ASN1STOP ⋮ 6.3 RRC information elements 6.3.1 System information blocks – <i>SystemInformationBlockType2</i> The IE <i>SystemInformationBlockType2</i> contains radio resource configuration information that is common for all UEs.

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	NOTE:UE timers and constants related to functionality for which parameters are provided in another SIB are included in the corresponding SIB. <i>SystemInformationBlockType2 information element</i> -- ASN1START <pre> SystemInformationBlockType2 ::= SEQUENCE { ac-BarringInfo SEQUENCE { ac-BarringForEmergency BOOLEAN, ac-BarringForMO-Signalling AC-BarringConfig OPTIONAL, -- Need OP ac-BarringForMO-Data AC-BarringConfig OPTIONAL -- Need OP } OPTIONAL, -- Need OP radioResourceConfigCommon RadioResourceConfigCommonSIB, ue-TimersAndConstants UE-TimersAndConstants, freqInfo SEQUENCE { ul-CarrierFreq ARFCN-ValueEUTRA OPTIONAL, -- Need OP ul-Bandwidth ENUMERATED {n6, n15, n25, n50, n75, n100} OPTIONAL, -- Need OP additionalSpectrumEmission AdditionalSpectrumEmission }, mbsfn-SubframeConfigList MBSFN-SubframeConfigList OPTIONAL, -- Need OR timeAlignmentTimerCommon TimeAlignmentTimer, </pre>

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant
	<pre> ..., lateNonCriticalExtension OCTET STRING (CONTAINING SystemInformationBlockType2-v8h0-IEs) OPTIONAL, -- Need OP [[ssac-BarringForMMTEL-Voice-r9 AC-BarringConfig OPTIONAL, -- Need OP ssac-BarringForMMTEL-Video-r9 AC-BarringConfig OPTIONAL -- Need OP]], [[ac-BarringForCSFB-r10 AC-BarringConfig OPTIONAL -- Need OP]] } SystemInformationBlockType2-v8h0-IEs ::= SEQUENCE { multiBandInfoList SEQUENCE (SIZE (1..maxMultiBands)) OF AdditionalSpectrumEmission OPTIONAL, -- Need OR nonCriticalExtension SEQUENCE {} OPTIONAL -- Need OP } AC-BarringConfig ::= SEQUENCE { ac-BarringFactor ENUMERATED { p00, p05, p10, p15, p20, p25, p30, p40, p50, p60, p70, p75, p80, p85, p90, p95}, ac-BarringTime ENUMERATED {s4, s8, s16, s32, s64, s128, s256, s512}, ac-BarringForSpecialAC BIT STRING (SIZE(5)) } </pre>

US 10,200,976 – Claim 2	Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant							
	MBSFN-SubframeConfigList ::= SEQUENCE (SIZE (1..maxMBSFN-Allocations)) OF MBSFN-SubframeConfig -- ASN1STOP ⋮ 6.3.4 Mobility control information elements ⋮ – FreqBandIndicator The IE FreqBandIndicator indicates the E-UTRA operating band as defined in TS 36.101 [42, table 5.5-1]. FreqBandIndicator information element -- ASN1START FreqBandIndicator ::= INTEGER (1..64) -- ASN1STOP <u>Relevant Sections of 3GPP TS 36.101 v11.3.0:</u> 5 Operating bands and channel arrangement ⋮ Table 5.5-1 E-UTRA operating bands <table><tr><th>E-UTRA Operating Band</th><th>Uplink (UL) operating band BS receive UE transmit</th><th>Downlink (DL) operating band BS transmit UE receive</th><th>Duplex Mode</th></tr></table>				E-UTRA Operating Band	Uplink (UL) operating band BS receive UE transmit	Downlink (DL) operating band BS transmit UE receive	Duplex Mode
E-UTRA Operating Band	Uplink (UL) operating band BS receive UE transmit	Downlink (DL) operating band BS transmit UE receive	Duplex Mode					

US 10,200,976 – Claim 2		Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant			
			F_{UL_low} – F_{UL_high}	F_{DL_low} – F_{DL_high}	
	1	1920 MHz	– 1980 MHz	2110 MHz	– 2170 MHz FDD
	2	1850 MHz	– 1910 MHz	1930 MHz	– 1990 MHz FDD
	3	1710 MHz	– 1785 MHz	1805 MHz	– 1880 MHz FDD
	4	1710 MHz	– 1755 MHz	2110 MHz	– 2155 MHz FDD
	5	824 MHz	– 849 MHz	869 MHz	– 894MHz FDD
	6 ¹	830 MHz	– 840 MHz	875 MHz	– 885 MHz FDD
	7	2500 MHz	– 2570 MHz	2620 MHz	– 2690 MHz FDD
	8	880 MHz	– 915 MHz	925 MHz	– 960 MHz FDD
	9	1749.9 MHz	– 1784.9 MHz	1844.9 MHz	– 1879.9 MHz FDD
	10	1710 MHz	– 1770 MHz	2110 MHz	– 2170 MHz FDD

US 10,200,976 – Claim 2		Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant					
		11	1427.9 MHz – 1447.9 MHz	1475.9 MHz – 1495.9 MHz	FDD		
		12	699 MHz – 716 MHz	729 MHz – 746 MHz	FDD		
		13	777 MHz – 787 MHz	746 MHz – 756 MHz	FDD		
		14	788 MHz – 798 MHz	758 MHz – 768 MHz	FDD		
		15	Reserved	Reserved	FDD		
		16	Reserved	Reserved	FDD		
		17	704 MHz – 716 MHz	734 MHz – 746 MHz	FDD		
		18	815 MHz – 830 MHz	860 MHz – 875 MHz	FDD		
		19	830 MHz – 845 MHz	875 MHz – 890 MHz	FDD		
		20	832 MHz – 862 MHz	791 MHz – 821 MHz	FDD		
		21	1447.9 MHz – 1462.9 MHz	1495.9 MHz – 1510.9 MHz	FDD		
		22	3410 MHz – 3490 MHz	3510 MHz – 3590 MHz	FDD		

US 10,200,976 – Claim 2		Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant				
	23	2000 MHz	– 2020 MHz	2180 MHz	– 2200 MHz	FDD
	24	1626.5 MHz	– 1660.5 MHz	1525 MHz	– 1559 MHz	FDD
	25	1850 MHz	– 1915 MHz	1930 MHz	– 1995 MHz	FDD
	26	814 MHz	– 849 MHz	859 MHz	– 894 MHz	FDD
	27	807 MHz	– 824 MHz	852 MHz	– 869 MHz	FDD
	28	703 MHz	– 748 MHz	758 MHz	– 803 MHz	FDD
	29	N/A		717 MHz	– 728 MHz	FDD ²
	...					
	33	1900 MHz	– 1920 MHz	1900 MHz	– 1920 MHz	TDD
	34	2010 MHz	– 2025 MHz	2010 MHz	– 2025 MHz	TDD
	35	1850 MHz	– 1910 MHz	1850 MHz	– 1910 MHz	TDD
	36	1930 MHz	– 1990 MHz	1930 MHz	– 1990 MHz	TDD

US 10,200,976 – Claim 2		Illustrative Sections of relevant 3GPP Specification to which the Accused Instrumentalities are compliant				
	37	1910 MHz	– 1930 MHz	1910 MHz	– 1930 MHz	TDD
	38	2570 MHz	– 2620 MHz	2570 MHz	– 2620 MHz	TDD
	39	1880 MHz	– 1920 MHz	1880 MHz	– 1920 MHz	TDD
	40	2300 MHz	– 2400 MHz	2300 MHz	– 2400 MHz	TDD
	41	2496 MHz	2690 MHz	2496 MHz	2690 MHz	TDD
	42	3400 MHz	– 3600 MHz	3400 MHz	– 3600 MHz	TDD
	43	3600 MHz	– 3800 MHz	3600 MHz	– 3800 MHz	TDD
	44	703 MHz	– 803 MHz	703 MHz	– 803 MHz	TDD
NOTE 1: Band 6 is not applicable NOTE 2: Restricted to E-UTRA operation when carrier aggregation is configured. The downlink operating band is paired with the uplink operating band (external) of the carrier aggregation configuration that is supporting the configured Pcell.						

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the communication terminal device performs downlink communication using the associated cell and a non-associated cell configured by the base station to include only another resource for downlink, the other resource for downlink being allocated to the downlink communication from the base station device.	The Accused Instrumentalities are communication terminal devices configured to perform downlink communication using the associated cell and a non-associated cell configured by the base station to include only another resource for downlink, the other resource for downlink being allocated to the downlink communication from the base station device. Specifically, the Accused Instrumentalities satisfy these elements because they must be compliant with the following Specifications: As noted in TS 36.300, Section 7.5, for carrier aggregation (CA), a UE may be configured with one PCell and one or more SCells, and the number of downlink SCCs (secondary component channels) is always greater than or equal to the number of uplink SCCs (therefore, there may be one uplink band (“resource”) and two downlink bands (“resources”), of which one may be configured from a SCell). TS 36.331, Section 4.2.1 establishes that the function of allocating these resources is performed by the network and, therefore, via the eNB. <u>Relevant Sections of the Standard:</u> The sections of the standard cited in conjunction with elements (a) and (b) are also relevant to element (c). The following further sections of the standard are also relevant to element (c). <u>Relevant Sections of TS 36.300 v11.2.0:</u> 7 RRC ⋮ 7.5 Carrier Aggregation When CA is configured, the UE only has one RRC connection with the network. At RRC connection establishment/re-establishment/handover, one serving cell provides the NAS mobility information (e.g. TAI), and at RRC connection re-establishment/handover, one serving cell provides the security input. This cell is referred to as the Primary Cell (PCell). In the downlink, the carrier corresponding to the PCell is the Downlink Primary Component

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	Carrier (DL PCC) while in the uplink it is the Uplink Primary Component Carrier (UL PCC). Depending on UE capabilities, Secondary Cells (SCells) can be configured to form together with the PCell a set of serving cells. In the downlink, the carrier corresponding to an SCell is a Downlink Secondary Component Carrier (DL SCC) while in the uplink it is an Uplink Secondary Component Carrier (UL SCC). The configured set of serving cells for a UE therefore always consists of one PCell and one or more SCells: - For each SCell the usage of uplink resources by the UE in addition to the downlink ones is configurable (the number of DL SCCs configured is therefore always larger than or equal to the number of UL SCCs and no SCell can be configured for usage of uplink resources only); - From a UE viewpoint, each uplink resource only belongs to one serving cell; - The number of serving cells that can be configured depends on the aggregation capability of the UE (see subclause 5.5); - PCell can only be changed with handover procedure (i.e. with security key change and RACH procedure); - PCell is used for transmission of PUCCH; - Unlike SCells, PCell cannot be de-activated (see subclause 11.2); - Re-establishment is triggered when PCell experiences RLF, not when SCells experience RLF;

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	- NAS information is taken from PCell. The reconfiguration, addition and removal of SCells can be performed by RRC. At intra-LTE handover, RRC can also add, remove, or reconfigure SCells for usage with the target PCell. When adding a new SCell, dedicated RRC signalling is used for sending all required system information of the SCell i.e. while in connected mode, UEs need not acquire broadcasted system information directly from the SCells.

Caveat: The notes and/or cited excerpts utilized herein are set forth for illustrative purposes only and are not meant to be limiting in any manner. For example, the notes and/or cited excerpts, may or may not be supplemented or substituted with different excerpt(s) of the relevant reference(s), as appropriate. Further, to the extent any error(s) and/or omission(s) exist herein, all rights are reserved to correct the same.