Implementing mobile broadband with the 700 MHz Digital Dividend

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WANG, Hu (wanghu.wanghu@huawei.com)

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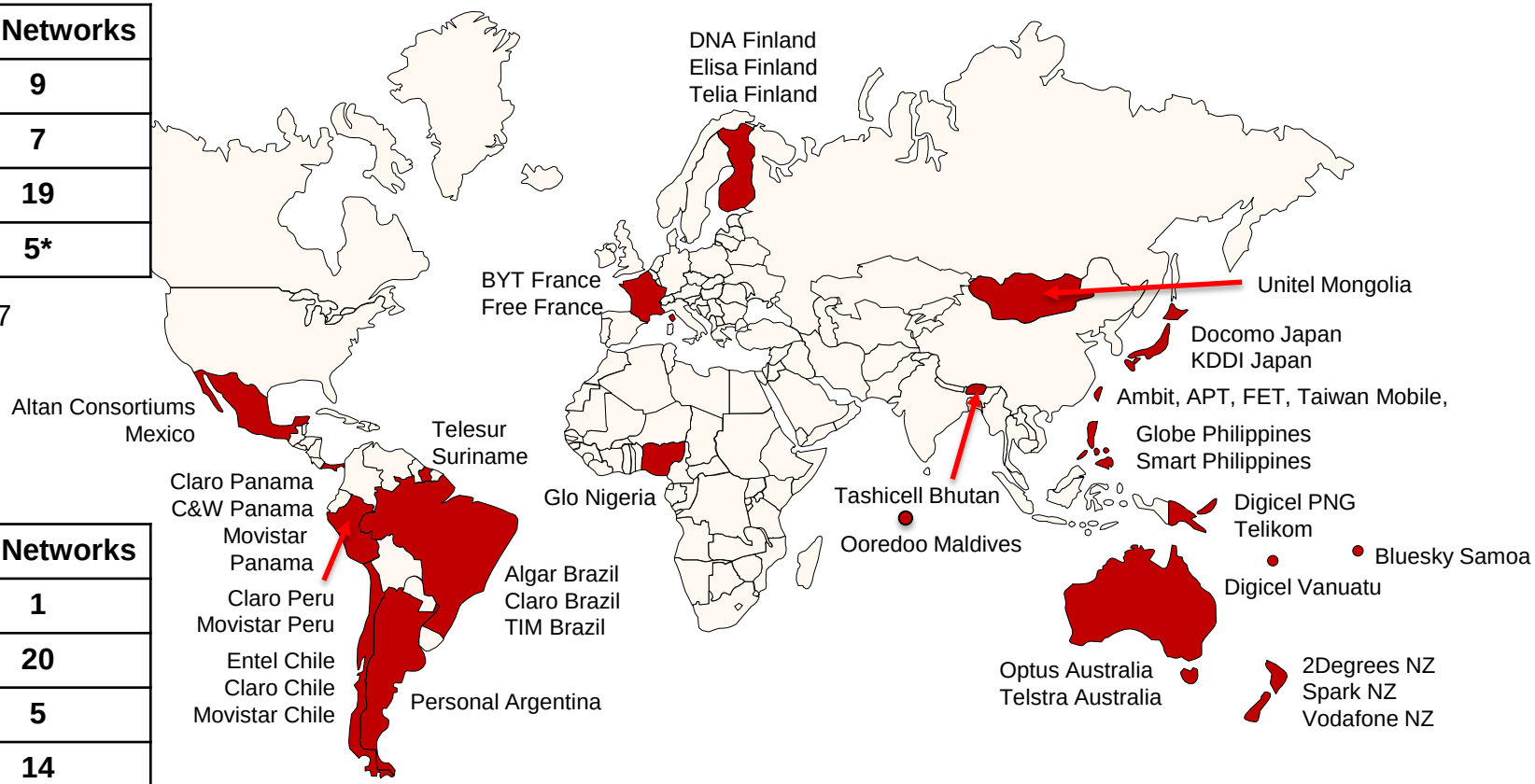
40 MNOs launched APT-700 LTE (B28) commercial service until Sept. 2017

Year	# of Networks
2014	9
2015	7
2016	19
2017	5*

*) Up to 09-2017

Region	# of Networks
Africa	1
APAC	20
Europe	5
LATAM	14



Sources: Public Announcements, GSA Reports [2014~2017-09]

APT700 B28 LTE deployments: 44 networks across more than 25 countries with >80% in APAC and LATAM regions (until Feb.2018)

700 MHz Network bandwidth configuration

Bandwidth	Africa & Middle East	APAC	Europe	South America
5MHz			Bouygues Telecom France SFR France	
10MHz	Glo Mobile Nigeria MTN Nigeria	Docomo Japan E-Access Japan KDDI Japan APT Taiwan China FET Taiwan China Optus Australia	Free Mobile France Orange France TEF-O2 Germany TMO Germany Vodafone Germany	Movistar Argentina Personal Argentina Claro Brazil TIM Brazil VIVO Brazil Algar Cellular Brazil* Claro Chile Movistar Chile 2Degrees New Zealand C&W Panama Movistar Panama
15MHz		Vodafone New Zealand Globe Philippines (17.5MHz) Smart Philippines (17.5MHz)		Claro Argentina Entel Chile Claro Panama Claro Peru Entel Peru Movistar Peru
20MHz		Telstra Australia		Spark New Zealand
25MHz		TWM & Ambit Taiwan China		

Source: Huawei, based on public information, 2017

A large number of 700 MHz (B28) networks are using 2x15 MHz and 2x10 MHz bandwidth

Carrier aggregation for 700 MHz

Region	Location	4G LTE MNO	Carrier Aggregation Support (Using Band 28)
Africa	Nigeria	Glo Mobile	
APAC	Australia	Optus	APT700 (b28) & 1800MHz (b3) APT700 (b28) & 2600MHz (b7)
		Telstra	APT700 (b28) & 1800MHz (b3) APT700 (b28) & 2600MHz (b7) APT700 (b28) & 1800MHz (b3) & 2600MHz (b7)
	Bhutan	Tashicell	
	Japan	Docomo	
		KDDI	APT700 (b28) & 2100MHz (b1) APT700 (b28) & 800MHz Japan (b18) APT700 (b28) & 2100MHz (b1) & 800MHz Japan (b18)
	Maldives	Ooredoo Maldives	APT700 (b28) & 2100MHz (b1) & 1800MHz Japan (b3)
	Mongolia	Unitel	
	New Zealand	2 Degrees	
		Spark	
		Vodafone	APT700 (b28) & 1800MHz (b3) APT700 (b28) & 1800MHz (b3) & 2600MHz (b7)
	Papua New Guinea	Digicel PNG	
		Telikom	
	Philippines	Globe	
		Smart	APT700 (b28) & 1800MHz (b3)
	Samoa	Bluesky	APT700 (b28) & 1800MHz (b3)
	Taiwan	Ambit	
		Asia Pacific Telecom	
		FET	APT700 (b28) & 1800MHz (b3) APT700 (b28) & 2600MHz (b7) APT700 (b28) & 1800MHz (b3) & 2600MHz (b7)
		Taiwan Mobile	APT700 (b28) & 1800MHz (b3)
	Vanuatu	Digicel	

Region	Location	4G LTE MNO	Carrier Aggregation Support (Using Band 28)
Europe	Finland	DNA	
		Elisa	
		TeliaSonera	
	France	Bouygues Telecom	
		Free Mobile	
LATAM	Argentina	Claro Argentina	
		Movistar Argentina	
		Personal	
	Brazil	Algar Telecom	
		Claro Brazil	APT700 (b28) & 1800MHz (b3) APT700 (b28) & 2600MHz (b7) APT700 (b28) & 1800MHz (b3) & 2600MHz (b7)
		TIM Brazil	APT700 (b28) & 1800MHz (b3) APT700 (b28) & 2600MHz (b7) APT700 (b28) & 1800MHz (b3) & 2600MHz (b7)
	Chile	Claro Chile	APT700 (b28) & 2600MHz (b7)
		Entel PCS	APT700 (b28) & 2600MHz (b7)
		Movistar Chile	APT700 (b28) & 2600MHz (b7)
	Mexico	Altan Consortium	
	Panama	Claro Panama	
		C&W	
		Movistar Panama	
	Peru	Claro Peru	
		Movistar Peru	APT700 (b28) & AWS-1 (b4)
	Suriname	Telesur	

Source: Huawei, based on public information, 2017

Carrier aggregations of 700 MHz (B28) and 1800, 2100, 2600 MHz are supported in many networks

Summary and recommendations

- Harmonization of spectrum
  - Synchronization of spectrum releasing time frame
- Technology neutral and service neutral
  - To allow 4G LTE as well as 5G
  - Mobile broadband, wireless broadband, IoT, etc.
- Take the advantage of wide coverage of 700MHz band
  - Meet different requirements to mobile and broadband services in urban, sub-urban and rural areas

Thank you

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