



AMERICAS TELECOMS SERVICE

Monitors regulatory developments in telecommunications in the Americas region (Latin America and North America)

December 2016

SAMPLE

TELECOMS AMERICAS



ABOUT CULLEN INTERNATIONAL

Regulation made simple

Cullen International tracks, reports on and benchmarks competition law cases and regulation in four sectors – telecommunications, media, digital economy and postal - covering developments across Europe, the Americas, the Middle East and North Africa.

For almost thirty years, we have been providing comprehensive, neutral, unbiased, timely information that is trusted by industry and official institutions alike. We are widely recognised as the leading regulatory intelligence provider in the field.

Our services consist of a unique range of alerts, reports, benchmarks and enquiry services that are complemented by our training and consulting services. Our outstanding regulatory library contains over twenty-five years of source documents linked to expert analysis of events.

We are also regularly selected to carry out important research and studies for the European Commission and other organisations, and we are frequently sought out to chair or make presentations at industry events.

Our Clients

Cullen International is privileged to serve over 180 key market players and public organisations - all with a serious strategic focus on competition law or regulation in the telecommunications, media, digital economy and postal sectors.

These clients include operators, online service providers, broadcasters, equipment vendors, national regulatory authorities, competition authorities and ministries.

Strategically situated in Brussels, we are the eyes and ears on the ground for our clients, maintaining essential close links with all EU institutions, national regulatory authorities and our solid network of national regulatory experts in over fifty countries.

Cullen International in the Americas

Cullen International expanded its portfolio of regulatory intelligence services to Latin America in 2010, and to the US and Canada in 2016. Our Americas services, cover regulatory developments in the telecommunications, media and digital economy sectors, providing essential, timely insight into the region's ever-changing communications regulatory landscape.

To learn more about our Americas regulatory intelligence and support services please contact:

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Cullen International

Americas Telecoms Service

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The service monitors regulatory developments in telecommunications in the Americas region (Latin America and North America), with a special focus on Argentina, Brazil, Canada, Chile, Colombia, Mexico, Peru, and the USA.

The service includes the following reports:

- **Cross-Country Analysis** - Comparative tables benchmarking specific regulatory topics. Coverage: Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, Ecuador, México, Paraguay, Peru, and the USA. Updated four times per year.
- **Latam Telecom Updates** – Reports on key developments in telecommunications regulation at national level in Argentina, Brazil, Chile, Colombia, Mexico and Peru. Updated four times per year. Available in English and Spanish.
- **Country Profiles** - Regulatory cards tracking the regulatory environment and main legislation. Coverage: Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Ecuador, Mexico, Uruguay, Paraguay, Peru, Dominican Republic, Venezuela, and the USA. Updated every six months.
- **Flash messages** – News alerts on recent key regulatory developments. Coverage: all Americas. Issued shortly after the event has occurred.

Enquiry service - Customised research on specific regulatory questions at no additional cost.

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Cross-Country Analysis

Americas Telecoms Cross-Country Analysis

Covering developments until November 29, 2016



FIXED WHOLESALE

- Fixed network operators' wholesale access offers
- Fixed termination rates and cost model
- IP interconnection
- Wholesale leased lines regulation
- Infrastructure sharing by fixed operators

RADIO SPECTRUM

- LTE status
- Spectrum awards in progress
- Digital switchover dates and use of the digital dividend
- Mobile operators' licences

ALL OTHER TOPICS

- Authorisation regime
- Retail tariff regulation
- National broadband plans
- Recent Mergers & Acquisitions

MOBILE WHOLESALE

- Infrastructure and network sharing by mobile operators
- Mobile termination rates and cost model
- National mobile roaming
- Reductions in mobile termination rates
- Mobile Virtual Network Operators

CONSUMER PROTECTION

- Compensation for network outages
- Mobile user protection regulation – Overview
- Net neutrality
- Universal Service and Access Funds
- Quality of Service performance targets – telephony
- Quality of Service performance targets and monitoring – broadband
- Quality of Experience - User empowerment tools

This table shows regulation and agreements on infrastructure sharing by mobile operators, including passive sharing (site and mast sharing); active sharing (RAN with separate and joint spectrum and core network sharing) and national roaming.

Situation in the Americas

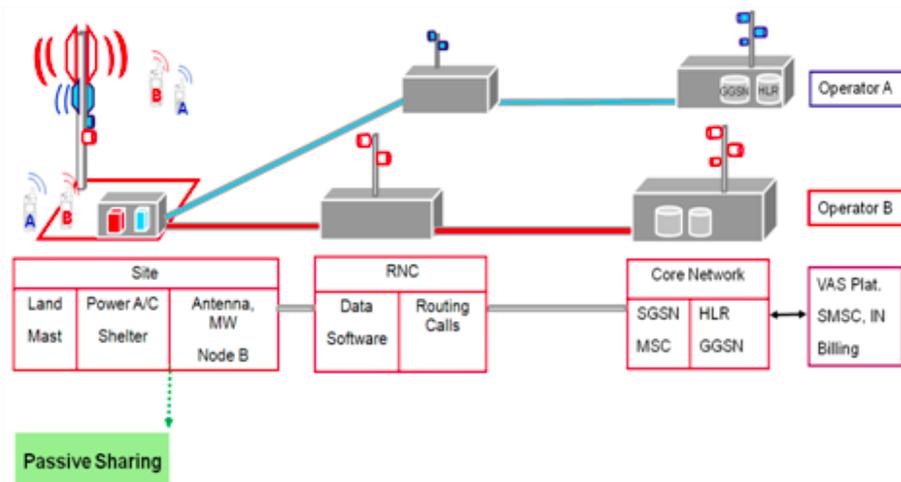
- Most NRAs in the eleven American countries covered have so far obliged MNOs with SMP to share their infrastructure, although some reserve the right to do so if an ANO requests sharing but cannot reach a commercial agreement with the SMP operator.
- In the US there is no such obligation, as mobile infrastructure and network sharing is unregulated.
- A common trend, both in the Americas is to outsource or sell towers to an independent third party, which then leases them to MNOs.
- Argentine and Colombian operators are required by their 4G licences to grant access to active and passive network elements.
- Brazil is the only country with active RAN sharing agreements.

Situation in Europe

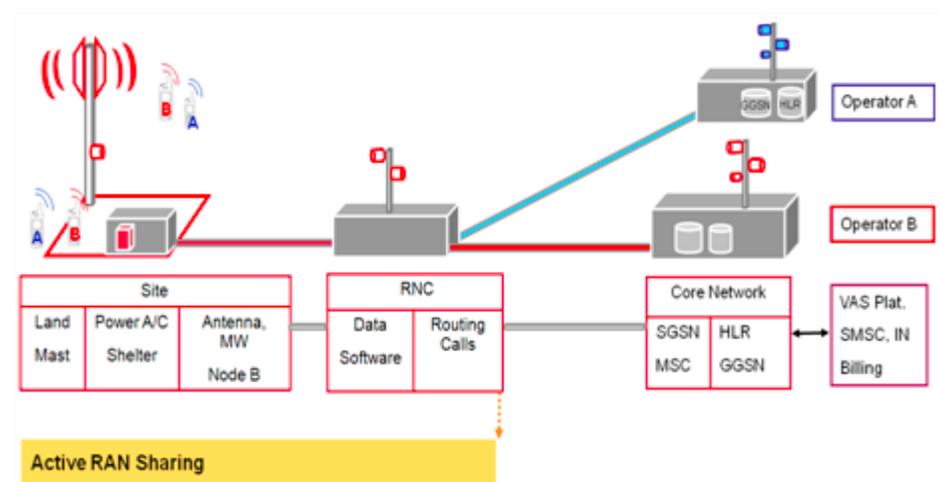
Article 12.1 of the amended Framework Directive states that NRAs shall “be able to impose the sharing of facilities or property, including buildings, entries to buildings, building wiring, masts, antennae, towers and other supporting constructions, ducts, conduits, manholes, cabinets.”

The European Commission found in 2003 that site sharing does not raise any competition concerns but reserved its position with regard to radio access network (RAN) sharing, where active elements and network intelligence are not independently controlled by each MNO.

Site and mast sharing (Vodafone)



RAN sharing (Vodafone)



Glossary of terms (Increasing depth of network sharing from left to right)			
Site sharing	Mast sharing	RAN sharing	RAN + core network sharing
<ul style="list-style-type: none"> Operators A and B share the same physical compound but install separate masts, antennae, and BTS/Node B. The operators may decide to share support equipment, including shelters, power supply and air conditioning. 	<ul style="list-style-type: none"> A step up from site sharing, operators A and B share the same mast (or other structure such as a rooftop). Each operator installs their own antenna onto the shared mast. As for site sharing, the operators may also share support equipment. 	<ul style="list-style-type: none"> Operators A and B share all access network equipment, incl. the mast, antenna, BTS/Node B, BSC/RNC and possibly also share backhaul to a point of connection with the core networks. Despite sharing the same hardware, each operator keeps separate 'logical' control over the RAN by using its own software. Each operator also uses its own spectrum if the agreement is with separate spectrum. There are also RAN sharing options with joint spectrum. 	<ul style="list-style-type: none"> In addition to RAN sharing (see notes in column to the left), operators A and B could also share some or all parts of the core network. In addition to classic transmission functions, the core network includes databases and platforms for the configuration and provision of services (e.g. service data, subscriber data).

Regulation

		Infrastructure sharing regulation - mobile					
		Site sharing	Mast sharing	RAN sharing, separate spectrum	RAN sharing, joint spectrum	Core network sharing	National mobile roaming
BR	Mobile operators	Mandated	Mandated	Available in practice	Available in practice	Not applicable	<p>Mandated</p> <p>National mobile roaming is mandated on operators with SMP in the mobile retail and wholesale markets (Vivo, Claro, TIM, Oi), in accordance with General Competition Plan (PGMC). The four SMP operators have published national roaming reference offers, which are available in a wholesale service negotiation platform. (Update)</p> <p>National roaming is generally regulated by Anatel Resolution 477/2007 (mobile services' regulation).</p>

Agreements

	Infrastructure sharing agreements - mobile								
	MNOs involved	Site sharing	Mast sharing	RAN sharing, separate spectrum	RAN sharing, joint spectrum	Core network sharing	National mobile roaming	Geographic scope	Agreement type
BR	TIM, Oi and Vivo TIM and Oi companies signed a RAN sharing agreement in 2013 to offer 4G services. Vivo asked to participate in this agreement, and CADE approved it in Dec. 2015.	Yes	Yes	Yes	Yes	No	Not applicable	National	Lease
	Vivo and Claro The agreement involves offer of 2G and 3G services in municipalities with less than 30,000 inhabitants. (Flash)	Yes	Yes	No	Yes (Flash)	No	Not applicable	National Municipalities with less than 30,000 inhabitants. The agreement was recently extended to more municipalities. (Update)	Lease
	TIM and Oi RAN and spectrum sharing agreement to offer 2G and 3G services in municipalities with less than 30,000 inhabitants. Approved by CADE in Jan. 2015 (Official Gazette)	Yes	Yes	No	Yes	No	Not applicable	National Municipalities with less than 30,000 inhabitants	Lease
	Vivo and Nextel Approved by Anatel on August 3, 2016 (ANATEL competition superintendence analysis). CADE approval on August 16, 2016	Yes	Yes	No	Yes	Yes	Not applicable	National National (except National Areas: 11, 12, 13, 19, 21, 22 and 24, in São Paulo State)	Lease
	Vivo and Nextel (Update)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Yes	Regional	Not applicable
	Sercomtel with each of: Oi, Vivo, Claro and TIM	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Yes	Regional	Not applicable
	CTBC (Algar Telecom) with each of: Oi, Vivo, Claro and TIM	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Yes	Regional	Not applicable



Net neutrality

Nov. 29, 2016 - Carolina Limbatto

The table shows net neutrality regulation and its main provisions, including the regulatory approach on zero rating.

Situation in the Americas

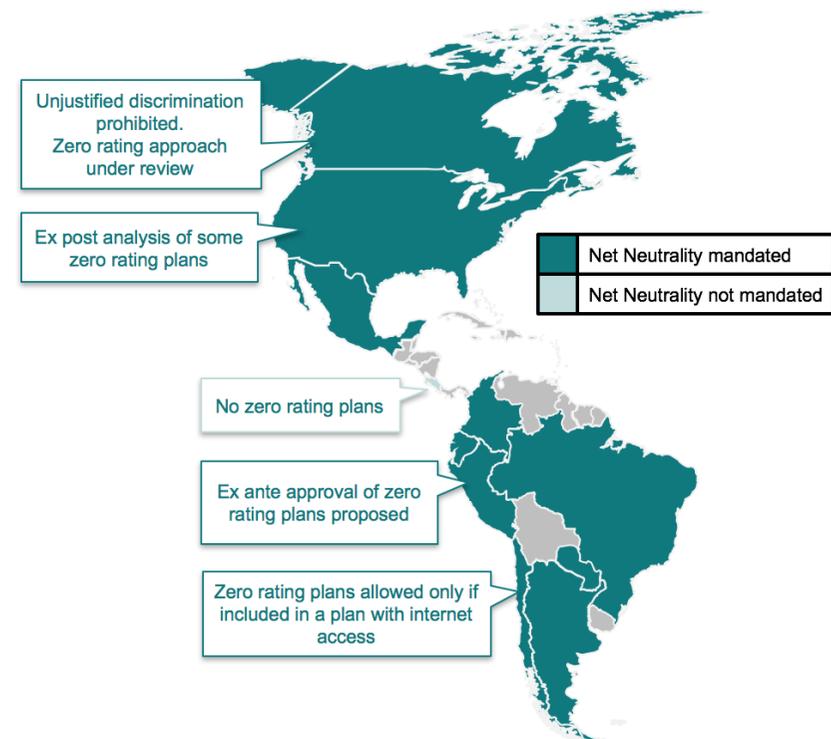
In the Americas, **net neutrality** has been mandated by law in eight countries - Argentina, Brazil, Canada, Chile, Colombia, Ecuador, Mexico and Peru – although with different situations in terms of implementation. In Costa Rica net neutrality provisions are included in the National Broadband Strategy and in Paraguay such provisions are included in telecommunication services regulation.

In the US, the current net neutrality rules ('Open Internet Order') were adopted by the FCC in February 2015. These rules re-establish (and strengthen) the 2010 Open Internet Order, that was partly vacated by the US Court of Appeals in 2014.

Net neutrality rules now apply to all fixed and mobile providers, now reclassified as 'common carriers', and enabling their regulation under Title II of the Communications Act of 1934

In all countries surveyed -except Costa Rica and Canada- there are '**zero rating**' plans for mobile services. Zero rating offers consist of exempting specific types of traffic from the data cap included in the end user's subscription.

Net neutrality is mandated in most American countries, several also allow zero rating plans (Cullen International)



Net Neutrality

	Is net neutrality mandated by law?		Net neutrality provisions				
	Mandated by law?	Overall approach	Transparency: Users informed about traffic management practices?	Blocking or slowing of specific services or apps allowed?	Prioritisation of specialised services allowed?	Charging a premium to use specific services or apps allowed?	Minimum QoS imposed?
CA	<p>Yes</p> <p>The use of internet traffic management practices (ITMP) is regulated by Telecom Regulatory Policy CRTC 2009-657. A review of differential pricing now underway is considering whether the existing ITMP framework should be modified to address differential pricing practices and, if so, how.</p>	<p>Focus on unjust discrimination.</p> <p>The Telecommunication Act (27 (2)) prohibits Canadian carriers from "<i>unjust discrimination</i>" as follows: "No Canadian carrier shall, in relation to the provision of a telecommunications service or the charging of a rate for it, unjustly discriminate or give an undue or unreasonable preference toward any person, including itself, or subject any person to an undue or unreasonable disadvantage."</p> <p>The ITMP framework is designed to ensure that any traffic management practices are necessary, transparent, and narrowly focused. Economic ITMPs (monthly bandwidth capacity limits or time-of-day pricing for bandwidth consumed) are preferred over technical ones (e.g. slowing down a user's traffic, prioritisation of traffic).</p>	<p>Yes</p> <p>The Commission expects ongoing disclosure of pricing information regarding economic ITMPs. (CRTC 2009-657, parag. 58).</p> <p>For technical ITMPs: "Online disclosure should include the following information: why ITMPs are being introduced; who is affected by the ITMP; when the Internet traffic management will occur; what type of Internet traffic (e.g. application, class of application, protocol) is subject to management; and how the ITMP will affect a user's Internet experience, including the specific impact on speeds." (CRTC 2009-657, paragraph 60).</p> <p>Guidelines for responding to complaints regarding ITMPs are published in Telecom Information Bulletin CRTC 2011-609 and a status report on ITMPs is published quarterly.</p>	<p>No</p> <p>Regulation notes that "Application-specific ITMPs degrade or prefer one application, class of application, or protocol over another and may therefore warrant investigation under subsection 27(2) of the Act" (CRTC 2009-657, parag. 40).</p>	<p>No</p> <p>Regulation notes that "Application-specific ITMPs degrade or prefer one application, class of application, or protocol over another and may therefore warrant investigation under subsection 27(2) of the Act" (CRTC 2009-657, parag. 40).</p>	<p>No</p> <p>Regulation notes that "Application-specific ITMPs degrade or prefer one application, class of application, or protocol over another and may therefore warrant investigation under subsection 27(2) of the Act" (CRTC 2009-657, parag. 40).</p>	<p>No</p>

Zero rating

	Regulatory approach on zero rating	
	Specific regulation or guidance on zero rating	Current availability of 'zero rating' plans
CA	<p>Under review: Telecom Notice of Consultation CRTC 2016-192. A hearing to investigate differential pricing of Internet data plans took place on Oct. 31 2016. Broadcasting and Telecom Decision CRTC 2015-26 directed MNOs to stop offering zero-rated services. This decision was appealed to the Federal Court of Appeal. The court dismissed the appeal in June 2016.</p>	<p>No</p>



Wholesale leased lines regulation

Nov. 29, 2016 - Carolina Limbatto

This table shows:

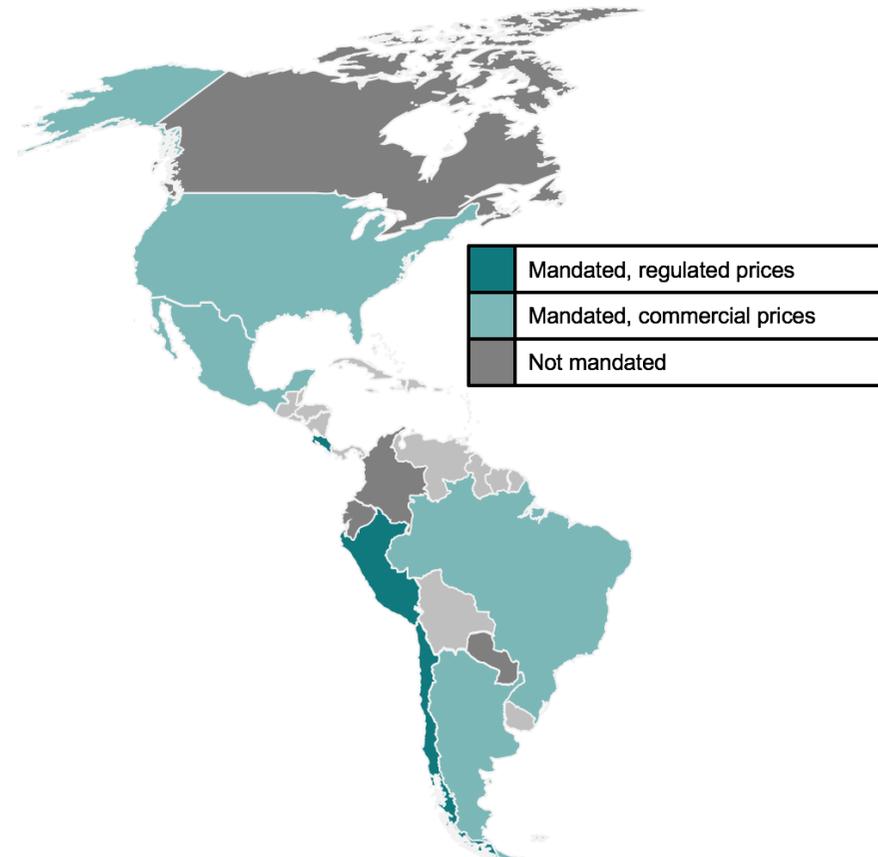
- if wholesale leased lines offer is mandated;
- if prices are regulated or agreed on commercial terms; and
- any other applicable remedies.

Offer of wholesale leased lines is mandated in six of the nine Latin American countries surveyed: Argentina, Brazil, Chile, Costa Rica, Mexico and Peru.

In Canada wholesale leasing of line is not mandated.

In the United States, incumbents local exchange operators (ILECs) must provide access to wholesale leased lines. Prices are agreed commercially. If they do not reach an agreement, parties may apply for an arbitration procedure before the competent State Utility Commission (PUC) which will define terms and conditions.

Even if wholesale leased line offer is mandated, prices are usually agreed commercially (Cullen International)



Wholesale leased lines regulation				
	Are wholesale leased lines regulated?	Are prices set by regulator or by commercial offer?	If price set by regulator, method used?	Other remedies imposed?
CL	Yes Art. 29.2 GTL and TLDC Resolution 686. Regulated for Telsur since 1999.	Regulated Subtel website with current regulation	Price cap Cost orientation: 'total service LRIC' set by Subtel per tariff area (not operator). Subtel establishes a price cap every 5 years (see Subtel's tariff decrees). Access charges are determined using an efficient operator model in a regulated process involving the operators and Subtel. For example, see Telefonica Chile's tariff Decree 77 of May 5, 2014, approved in February 13, 2015. (Sec. 3 - "enlace punto a punto entre nodos")	No



Spectrum awards in progress

Nov. 29, 2016 - Carolina Limbatto

This table shows mobile spectrum awards in eleven American countries in the following spectrum bands:

- 600 MHz: 614-698 MHz (or possibly larger up to 566-698 MHz)
- 700 MHz: 703-748 and 758-803 MHz (APT band plan)
- 800 MHz: 814-849 and 859-894 MHz (CLR)
- 900 MHz: 880-915 and 925-960 MHz (GSM)
- 1800 MHz: 1710-1785 and 1805-1880 MHz (DCS)
- 1900 MHz: 1850-1910 and 1930-1990 MHz (PCS)
- AWS 1700-2100 MHz: 1710-1770 and 2110-2170 MHz
- 2.5 GHz: 2500-2690 MHz

Upcoming spectrum awards (Cullen International)

	Spectrum awards in progress							
	-	600 MHz	700 MHz	900 MHz	1800 MHz	1900-2100 MHz	2.5 GHz paired	2.5 GHz unpaired
AR	None scheduled							
BR	None scheduled							
CA		Proposed						
CL	None scheduled							
CO			Planned	Planned	Planned		Undecided	
CR					Planned	Planned		
EC	None scheduled							
MX			Finished				Planned	Planned
PE	None scheduled							
PY			Planned				Planned	
US		Ongoing						

New spectrum for mobile services

The last World Radiocommunication Conference was held in 2015 (WRC-15, Flash) and identified additional spectrum bands for international mobile telecommunications (IMT) at global and regional level:

- 614-698 MHz: Canada, Colombia, Mexico and the United States
- 1427-1518 MHz: all Americas
- 3.3-3.4 GHz: six Latin American countries
- 3.4-3.6 GHz: all Americas
- 3.6-3.7 GHz: Canada, Colombia, Costa Rica and the United States

Recently the FCC has allocated 10.85 GHz spectrum above 24 GHz for licensed, unlicensed, and shared use spectrum for wireless broadband services. (Flash)

		Spectrum awards in progress										
		Status	Number of licences	Geographic scope	Spectrum per licence	Validity	Award procedure	Spectrum use	Spectrum caps	Spectrum reserved for new entrant(s)?	Restrictions to applicants	Deadline to apply
US	600 MHz	Ongoing (Flash)	Undecided The number of licences per PEA will depend on the results of the auction. (stage 1 was 10, stage 2 is 9, stage 3 is 8)	Regional 416 Partial Economic Areas (PEAs)	2x5 MHz IFC initially identified a clearing target of 126 MHz of paired spectrum (2x50 MHz for telecoms services). The clearing target was not met in the first stage of the auction. On Sep. 13, 2016 the auction restarted with a clearing target of 114 MHz (2x45 MHz for telecoms services). (Flash)	12 years term Subsequent 10 years renewal terms	Other The FCC is carrying out an Incentive Auction under a clock phase auction procedure. Broadcasters are offering 600 MHz spectrum in a reverse auction, and telecom operators bid for the spectrum freed by broadcasters. (Flash)	Broadband	No	No	Technical and financial eligibility conditions	Stage 3 started on November 3, 2016 (Flash)



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