



# Proposals of the Azerbaijan Communications Administration regarding coordination of 470-862 MHz frequency band


30-31 March 2017

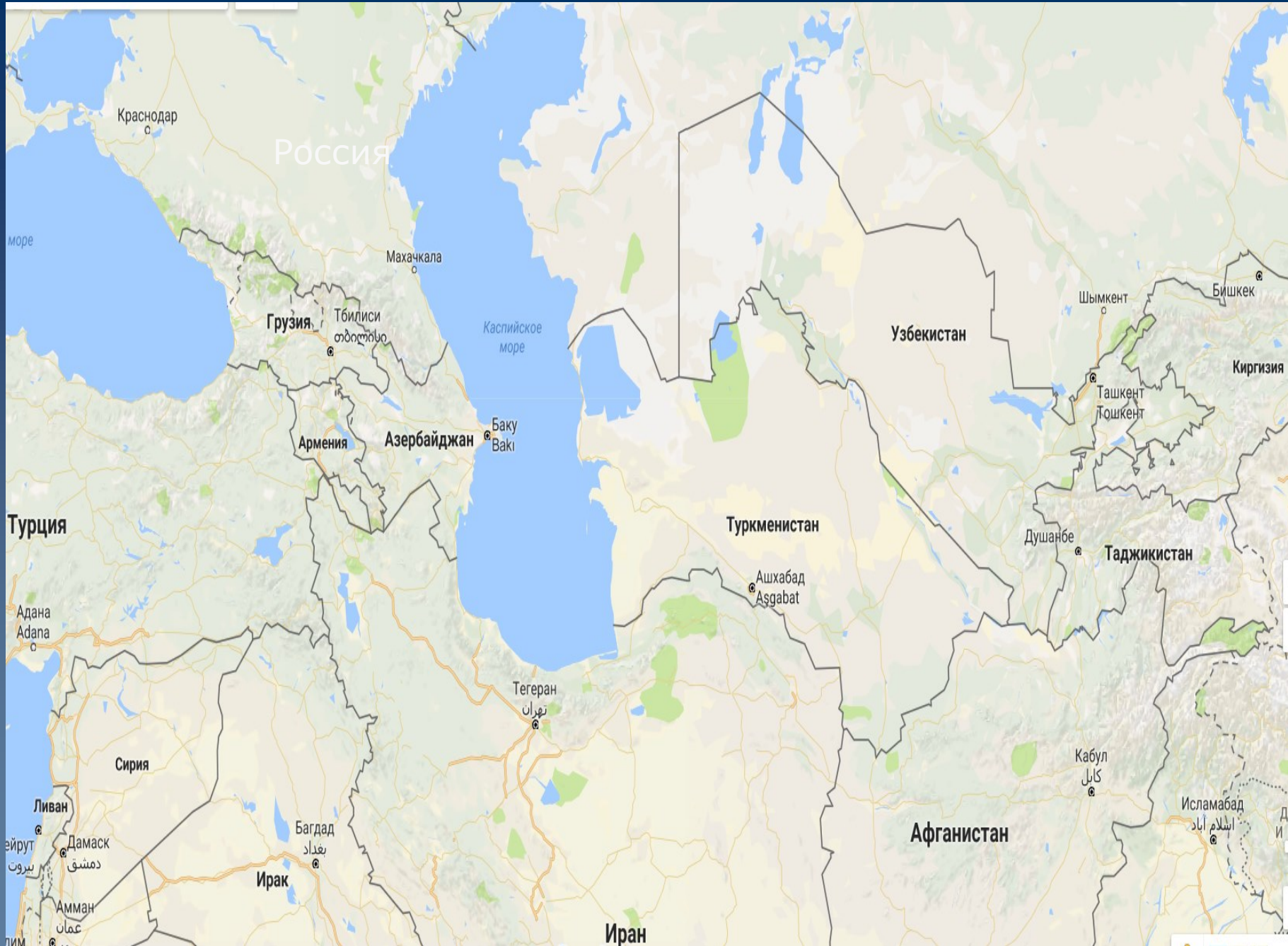
Geneva

# Transition to digital TV broadcasting

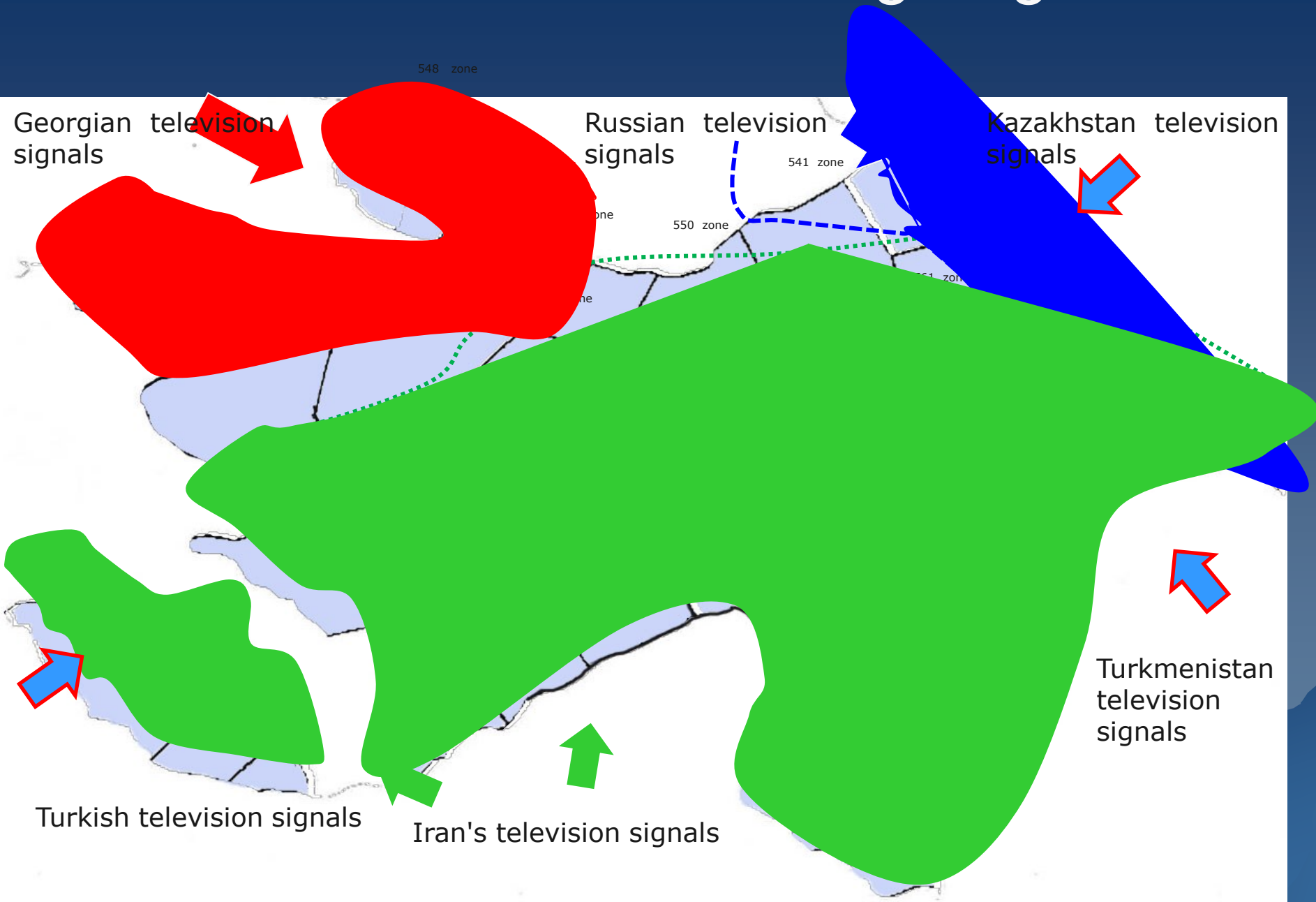
- ◆ In the Republic of Azerbaijan, the 470-862 MHz frequency band is allocated for digital TV broadcasting and other services.
- ◆ In light of the Resolutions of the World Radiocommunication Conferences (WRC) held in 2012 and 2015, it is considered advisable to allocate 694-862 MHz frequency band to broadband mobile communications services in the Republic of Azerbaijan.
- ◆ In the Republic of Azerbaijan, the terrestrial switchover started on 10 December 2015 and was completed on 20 December 2016.
- ◆ 99.6% of the territory of the Republic of Azerbaijan is covered digital television broadcasting, now.
- ◆ Aimed at effective use of 470-862 MHz frequency band due to switchover analogue TV broadcasting, new Frequency Plan has been developed in the country on the basis of “Geneva-06” Plan.

# Current situation

- ◆ The Caucasus region, where the Republic of Azerbaijan is situated, mainly consists of mountainous territories.
  - ◆ This being the case, TV and radio stations of neighboring countries are principally installed in the mountainous territories, TV and radio programs of these countries can penetrate to a greater part of Azerbaijan.
  - ◆ More to the point, as Azerbaijan is situated on the shore of the Caspian Sea which is considered to be a warm sea, broadcastings by neighboring countries are also received in the territory of Azerbaijan through this sea (especially in summer).
- 



# Penetration of broadcastings signals



# Current situation

- ◆ Several region countries consider continuing digital TV broadcasting in this frequency band, and others using broadband mobile communications services.
- ◆ In such a case, currently, coordination of these services in the region has become matter of high complexity.
- ◆ As it has been mentioned, in small countries such as Azerbaijan, quite large coordination distances seem to make impossible application of mobile communications services in the 694-862 MHz frequency band for a longer period of time.
- ◆ Consequently, it affects negatively to development of new technologies in our region.

# Proposal 1

- ◆ If the 694-790 MHz and 790-862 MHz frequency band is intended for mobile communications services in the region countries, it is proposed to identify the number of digital TV channels which will remain in the areas of the countries in the bordering territories after TV channels falling to this band have been excluded .
- ◆ In the event the number of channels is 3 or less, and does not satisfy the countries, it is proposed to reach relevant agreements through bilateral and multilateral discussions regarding usage of extra frequency bands in these areas (taking into account geographical relief and other factors).



# Proposal 2

- ◆ If one of the region countries intends to apply broadband mobile communications services (LTE), and the other country to apply digital TV broadcasting in the 694-790 MHz and 790-862 MHz frequency band and these countries are neighbor countries, in this case it is proposed mutual replanning of TV channels above and below 49 in the bordering territories between neighbor countries.
- ◆ Thus, it is proposed mutual harmonization of TV channels below 49 in the areas of the bordering territories of the country which will apply LTE, and additional TV channels below 49 the areas of the bordering territories of the country which will apply digital TV broadcasting (in this case mutual substitution of channels can be regarded).
- ◆ *During harmonization the below-mentioned proposals can be considered in identifying additional TV channels per areas.*



# Proposal 3

- ◆ During analysis of harmonization of frequency bands, the “RCC06 planning Interface” software was used at the Regional Conference held in 2006.
- ◆ As during analyses performed by this software the relief was not considered, non-harmonization of numerous frequency channels was revealed which do not reflect the real situation.
- ◆ Analyses performed between Azerbaijan and Russia, Kazakhstan and Kirgizstan can be shown as an example in this respect .

File View Tools Window Help

Administration: KAZ

Administration Unique Identifier: KAZ5514

Site/Allotment Name: KAZ14

Details | Colours | Frequencies | Symbols

Geographical area: KAZ

Notice Type: DT2

Not linked

Tx

Rx

Acceptable Channel/Frequency Block: 55

Available Channel/Frequency Block: 55

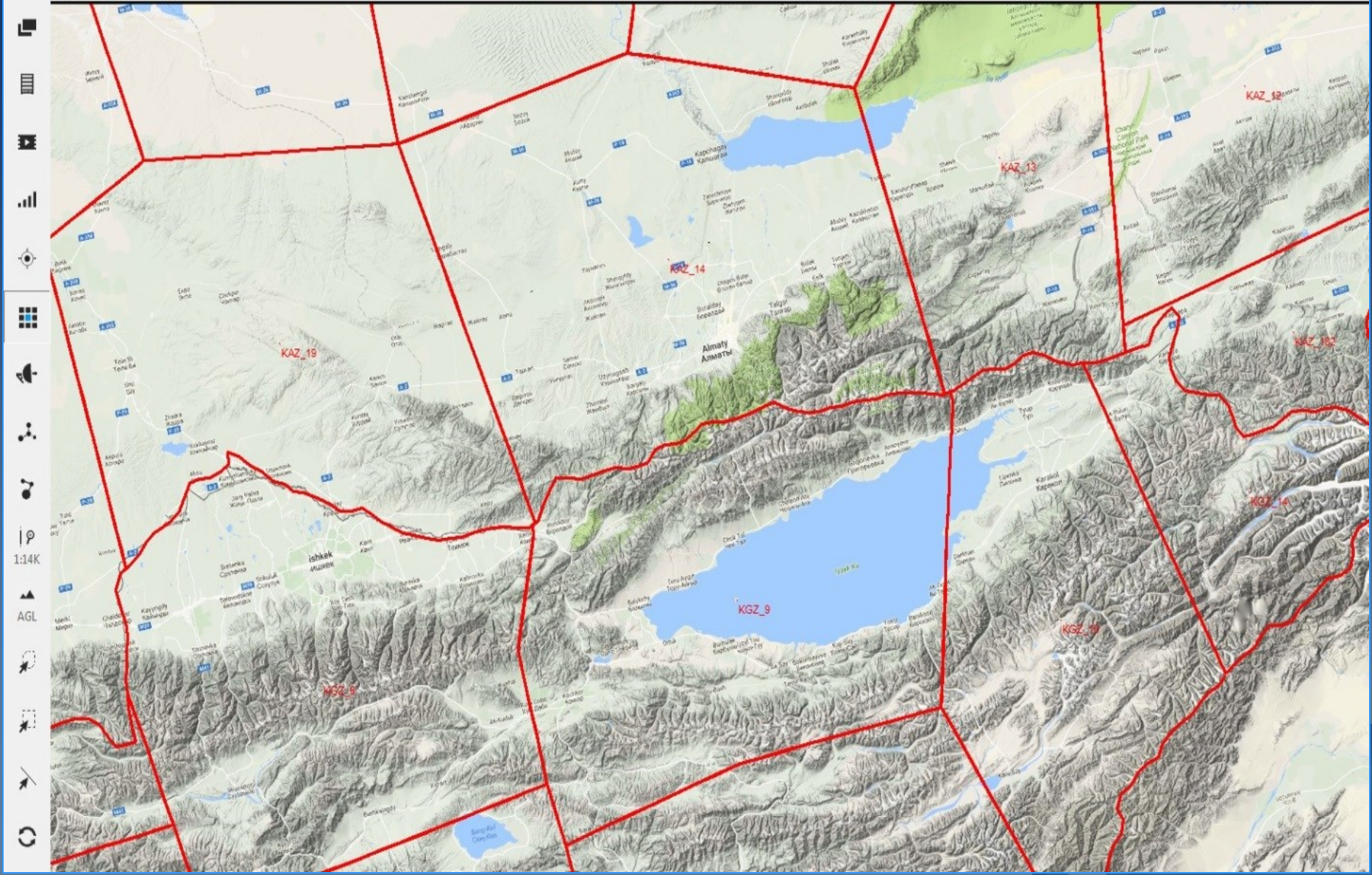
Assigned Channel/Frequency Block: 55

Digital Interferers | Digital Affected | Other Services Interferers | Other Services Affected

Adm	Geo Area	Not Type	Adm Ref Id	Site/Allot Name	Ch/block	Avail. Ch/block	Assign. ch/bloc	Wanted chann	Interf. channel	Distance (km)	CNFS (dB(uV))	Margin (dB)	Admin. Decl.	Relation	8BH (dBW)	8BV (dBW)
KGZ	KGZ	DT2	KGZ5510	KGZ10	55	55	55	55	55	2.5	106.9	49.76	AD	Interference		
KGZ	KGZ	DT2	KGZ556	KGZ6	55	55	55	55	55	1.4	107.5	50.29	AD	Interference		
KGZ	KGZ	DT2	KGZ557	KGZ7	55	55	55	55	55	98	66.9	10.18	AD	Interference		
KGZ	KGZ	DT2	KGZ558	KGZ8	55	55	55	55	55	116.3	63.5	7.22	AD	Interference		
KGZ	KGZ	DT2	KGZ559	KGZ9	55	55	55	55	55				AD	Overlap		

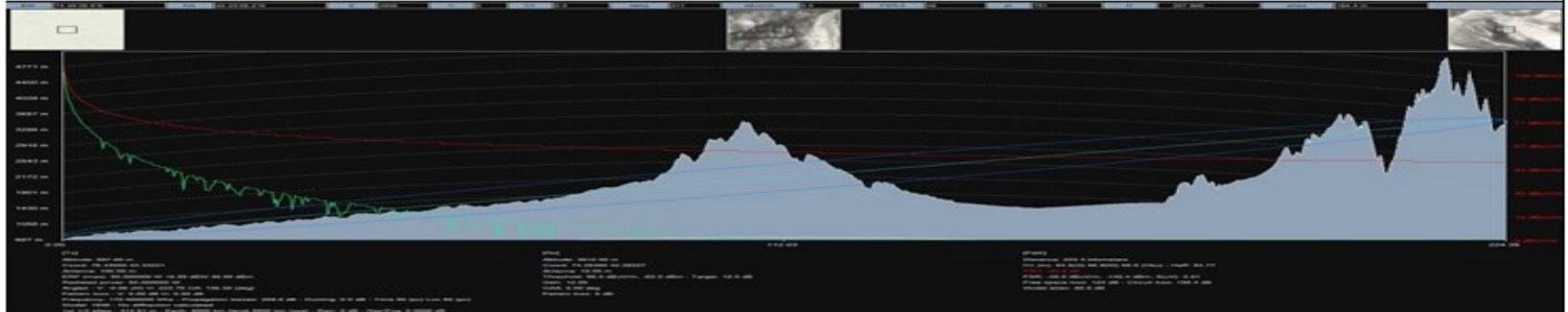
Check all







# KAZ 14 - KGZ 6



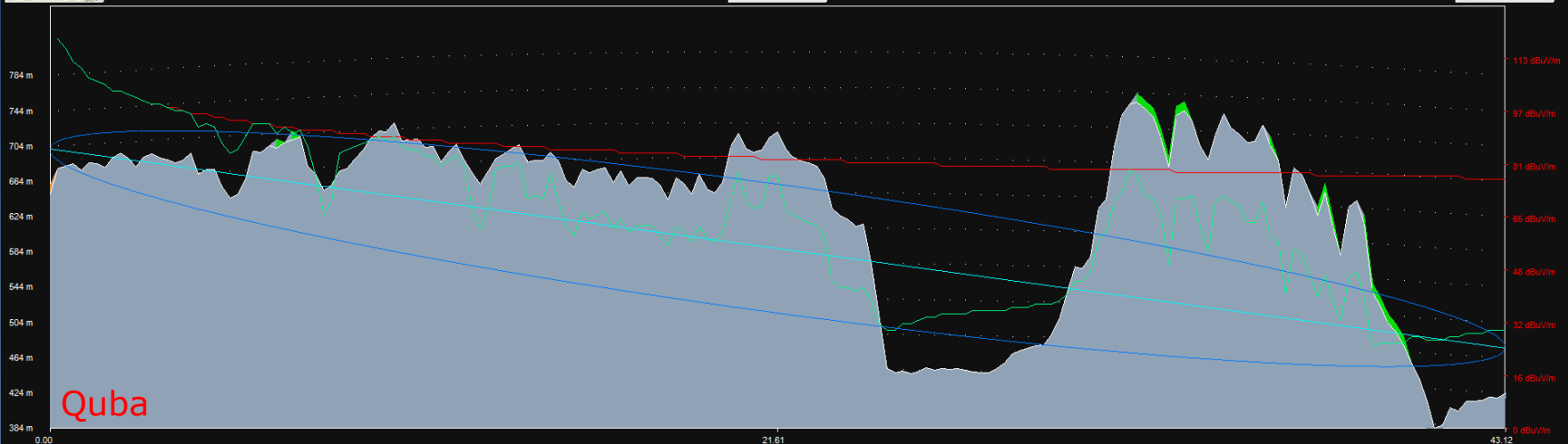
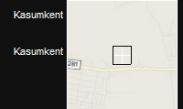
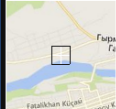
# KAZ 14 - KGZ 9



# KAZ 14 - KGZ 10



EW NS Z C Ch delta dBuV/m FSR-2 pt D ellips




[Tx] PolH  
 Altitude: 650.00 m  
 Coord: 48.28895 41.22057 639 4DMD  
 Antenna: 50.00 m  
 ERP (max): 1778.279410 W 32.50 dBW 62.50 dBm  
 Radiated power: 1571.9364014 W  
 Angles - V: -0.45 (M), H: 329.63, OA: 30.37 (deg)  
 Pattern loss - V: 0.04 dB H: 0.50 dB  
 Frequency: 615.250000 Mhz - Propagation losses: 166.7 dB - Ducting: 0.0 dB -  
 Model: ITU526 - Deygout 29.7 dB - Subpath: 16.1 dB - Ground reflections: 0.0 dB - Clutter: 0.0 dB  
 1st 1/2 ellips.: 72.50 m - Earth: 8500 km (land) 8500 km (sea) - Rain: 0 dB - Gaz/Fog: 0.0000 dB

[Rx] PolH  
 Altitude: 424.00 m  
 Coord: 48.114053 41.404911 424 4DMS  
 Antenna: 50.00 m  
 Threshold: 56.0 dBuV/m, -77.0 dBm - Target: 10.0 dB  
 Gain: 0.00  
 OAA: 149.63 deg  
 Pattern loss: 0.54 dB

[Path]  
 Distance: 43.1 kilometers  
 H1 (m): 26.3(G) 25.2(W) 24.9 (Oku)  
 P50: -25.6 dB  
 FSR: 30.4 dBuV/m, -103.1 dBm, S(uV): 1.92  
 FSR: 30.4 dBuV/m, -103.1 dBm (RS)  
 Free space loss: 121 dB - Circuit loss: 163.1 dB  
 Model atten: 0.0 dB

Kasumkent

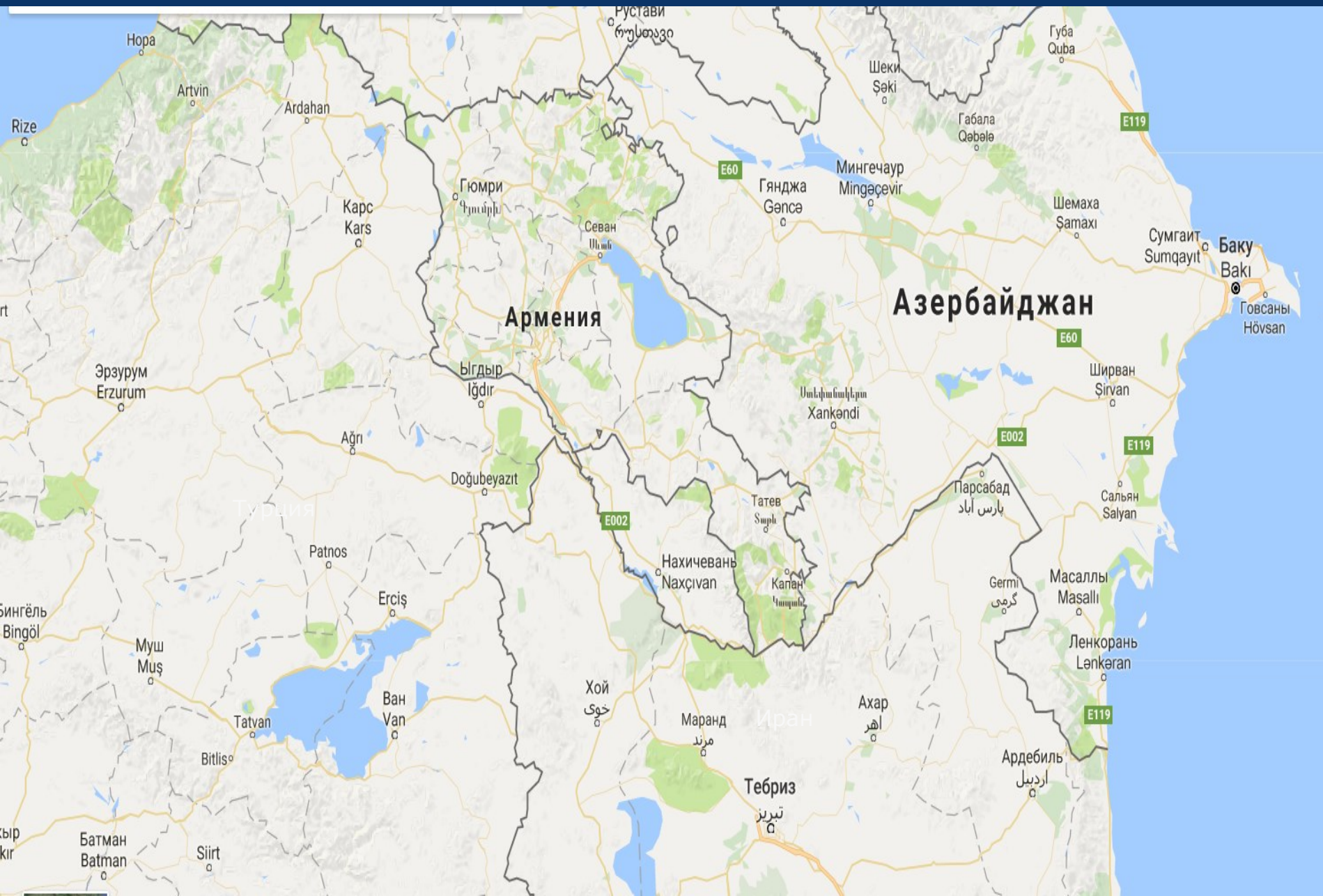
# Proposal 3

- ◆ The attachment shows that high mountain ranges are located between the above-mentioned areas which enable interference-free usage of the same channels in both of them.
  - ◆ Such kind of cases can be reviewed between other areas in the neighboring territories.
  - ◆ In its turn, it enables mutual interference-free usage of other channels not considered in the Geneva-06 Plan by the ITU in different neighboring territories instead of those which are considered in the Plan.
  - ◆ These issues are proposed to be agreed during meetings of the this group.
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Thank you !







Армения

Азербайджан

Баку

E002

E60

E119

E002

E119

E119

Երևան  
Yerevan

Мингечаур  
Mingəcevir

Гянджа  
Gəncə

Севан  
Seyvan

Сумгаит  
Sumqayıt

Говсаны  
Hövsan

Իğdır  
Iğdir

Ստեփանակերտ  
Xankəndi

Ширван  
Şirvan

Аğrı

Doğubeyazıt

Татев  
Təpə

Парсабад  
Parsabad

Сальян  
Salyan

Patnos

Erciş

Нахичевань  
Naхçıvan

Капан  
Kapən

Масаллы  
Masallı

Ленкорань  
Lənkəran

Сингелъ  
Bingöl

Муш  
Muş

Хой  
Xoy

Маранд  
Marand

Иран

Ахар  
Ahar

Тебриз  
Təbriz

Ардебиль  
Ardəbil

Битлис  
Bitlis

Ван  
Van

Батман  
Batman

Сирт  
Siirt