

01 September 2021

Independent Communications Authority of South Africa

Attention: Mr Manyapelo Richard Makgotlho

Per email: rmakgotlho@icasa.org.za

DRAFT NATIONAL RADIO FREQUENCY PLAN 2021

Introduction

1. Comsol Networks (Pty) Ltd ("Comsol") welcomes the Authority's invitation to comment on the Draft National Radio Frequency Plan 2021ⁱ ("Draft NRFP 2021").
2. Comsol wishes to thank the project team for its time and effort in preparing this update to the National Radio Frequency Plan.
3. Comsol limited it's entries relating to:
 - a. 28GHz spectrum
 - b. C-Band 3 600MHz – 4 200MHz (3 700 MHz spectrum)
 - c. 60GHz (V-Band) spectrum

The Authority is aware of Comsol's historical and continued involvement in the development of an enabling regulatory framework for the use of dynamic spectrum management in South Africa.

4. 28GHz Spectrum (27.5GHz – 29.5GHz)

Comsol notes the appearance of the following entry in the "Typical Applications" and "Notes and Comments" columns for the allocations in respect of 27.5GHz – 29.5GHz with reference to ITU-R F.748-4:

Typical Applications

Fixed Links (28 GHz) (27.5 –29.5 GHz), LMDS

Notes and Comments

LMDS (31.000 – 31.300 MHz)
Subscriber to Base
Channelling plan for 28 GHz band
in accordance with **ITU-R Rec.
F.748 Annex 2.**

With special reference to ITU-R F.748-4 Annex 2, there is no mentioning if TDD channels can be used specifically for the 28GHz band as per ICASA's assignment (see below)



28 GHz CHANNEL PLAN (BASE SUBSCRIBER & SUBSCRIBER TO BASE STATION)														
ITU-R F.748-4			ITU-R F.748-4			ITU-R F.748-4			ITU-R F.748-4			ITU-R F.748-4		
f0	28500,5		f0	28500,5		f0	28500,5		f0	28500,5		f0	28500,5	
ch width	112		ch width	56		ch width	28		ch width	14		ch width	14	
ctr. Gap	224		ctr. Gap	168		ctr. Gap	140		ctr. Gap	126		ctr. Gap	126	
sep.	1008		sep.	1008		sep.	1008		sep.	1008		sep.	1008	
Preferred reference raster														
ch	go	return	ch	go	return	ch	go	return	ch	go	return	ch	go	return
1	27604,50	28612,50	1	27576,50	28584,50	1	27562,50	28570,50	1	27555,50	28563,50	33	28003,50	29011,50
2	27716,50	28724,50	2	27632,50	28640,50	2	27590,50	28598,50	2	27569,50	28577,50	34	28017,50	29025,50
3	27828,50	28836,50	3	27688,50	28696,50	3	27618,50	28626,50	3	27583,50	28591,50	35	28031,50	29039,50
4	27940,50	28948,50	4	27744,50	28752,50	4	27646,50	28654,50	4	27597,50	28605,50	36	28045,50	29053,50
5	28052,50	29060,50	5	27800,50	28808,50	5	27674,50	28682,50	5	27611,50	28619,50	37	28059,50	29067,50
6	28164,50	29172,50	6	27856,50	28864,50	6	27702,50	28710,50	6	27625,50	28633,50	38	28073,50	29081,50
7	28276,50	29284,50	7	27912,50	28920,50	7	27730,50	28738,50	7	27639,50	28647,50	39	28087,50	29095,50
8	28388,50	29396,50	8	27968,50	28976,50	8	27758,50	28766,50	8	27653,50	28661,50	40	28101,50	29109,50
			9	28024,50	29032,50	9	27786,50	28794,50	9	27667,50	28675,50	41	28115,50	29123,50
			10	28080,50	29088,50	10	27814,50	28822,50	10	27681,50	28689,50	42	28129,50	29137,50
			11	28136,50	29144,50	11	27842,50	28850,50	11	27695,50	28703,50	43	28143,50	29151,50
			12	28192,50	29200,50	12	27870,50	28878,50	12	27709,50	28717,50	44	28157,50	29165,50
			13	28248,50	29256,50	13	27898,50	28906,50	13	27723,50	28731,50	45	28171,50	29179,50
			14	28304,50	29312,50	14	27926,50	28934,50	14	27737,50	28745,50	46	28185,50	29193,50
			15	28360,50	29368,50	15	27954,50	28962,50	15	27751,50	28759,50	47	28199,50	29207,50
			16	28416,50	29424,50	16	27982,50	28990,50	16	27765,50	28773,50	48	28213,50	29221,50
						17	28010,50	29018,50	17	27779,50	28787,50	49	28227,50	29235,50
						18	28038,50	29046,50	18	27793,50	28801,50	50	28241,50	29249,50
						19	28066,50	29074,50	19	27807,50	28815,50	51	28255,50	29263,50
						20	28094,50	29102,50	20	27821,50	28829,50	52	28269,50	29277,50
						21	28122,50	29130,50	21	27835,50	28843,50	53	28283,50	29291,50
						22	28150,50	29158,50	22	27849,50	28857,50	54	28297,50	29305,50
						23	28178,50	29186,50	23	27863,50	28871,50	55	28311,50	29319,50
						24	28206,50	29214,50	24	27877,50	28885,50	56	28325,50	29333,50
						25	28234,50	29242,50	25	27891,50	28899,50	57	28339,50	29347,50
						26	28262,50	29270,50	26	27905,50	28913,50	58	28353,50	29361,50
						27	28290,50	29298,50	27	27919,50	28927,50	59	28367,50	29375,50
						28	28318,50	29326,50	28	27933,50	28941,50	60	28381,50	29389,50
						29	28346,50	29354,50	29	27947,50	28955,50	61	28395,50	29403,50
						30	28374,50	29382,50	30	27961,50	28969,50	62	28409,50	29417,50
						31	28402,50	29410,50	31	27975,50	28983,50	63	28423,50	29431,50
						32	28430,50	29438,50	32	27989,50	28997,50	64	28437,50	29445,50

In ANNEX 3 of ITU-R F.748-4 it is mentioned that in the bands 24.25-25.25GHz :

- The block arrangement is for both P-P and P-MP systems.
- Frequency blocks are paired to facilitate frequency division duplex (FDD) systems.
Preference is given to the lower frequency blocks for downlink operation and to the upper frequency blocks for uplink operation. **Time division duplex (TDD) systems may operate in either the lower or upper frequency blocks.**
- Operators may subdivide the 40 MHz blocks according to their needs.
- Larger frequency blocks can be made available through the aggregation of 40 MHz paired blocks.

Comsol would like clarity if the same TDD rules apply to the 28GHz channel plan allocated for SA use above.

In July 2018 Comsol was issued with a Trial Licence for 5G FWA in Soweto where we were given permission to use TDD channels within the 28GHz allocation. Since then, we asked ICASA for clarification regarding the use of TDD channels but with no response after several attempts.

Comsol hereby officially requests that:

1. The description be changed to **Time division duplex (TDD) systems may operate in either the lower or upper frequency blocks** for the 28GHz allocation.
2. FWA be change to “Mobility” and not only FWA (Fixed Wireless Access) as the existing deployed Base Stations will remain exactly the same for Mobility as for FWA.



Comsol requests that the Authority ensure the aforementioned entries accurately reflect the position set out in the Regulations.

5. C-Band (3600 – 4 200MHz) – 3 700MHz Spectrum

Comsol notes the appearance of the following entry in the “Typical Applications” and “Notes and Comments” columns for the allocations in respect of 3 600MHz – 4 200MHz

Typical Applications

Fixed links (4 GHz) (3600 – 4200 MHz)
C-band downlink
(VSAT/SNG/PTP links)

Notes and Comments

The sub-band 3 600-3 800 MHz could be used for BFWA where frequency sharing with FS PTP and/or FSS is feasible.
The channelling arrangement for PTP links in this band is based on ITU-R Recommendation F.635 Annex 1.
The sub-band 3 600-4 200 MHz is used for medium and high capacity PTP links and FSS.
In the band 3 600-3 800 MHz, FS PTP and FSS applications will have to operate on coordinated basis.

ICASA issued licences on a Secondary basis in the band 3600 – 3800 MHz for Fixed Wireless Access on a Point-to Point and Point-to-Multipoint exclusive basis.

Comsol is of the opinion that the FWA can be changed to “Mobile” without causing harmful interference to the Primary users on a strict coordinated basis as the current deployed Base Stations for the Point-to-Multipoint deployment will remain exactly the same for mobility.

Comsol hereby requests the Authority to consider FWA be change to “Mobility” and not only FWA (Fixed Wireless Access) for the 3700MHz band.

6. 60GHz (V-Band) spectrum

With reference to Government Gazette No 40436 Dated 22 November 2016 and Government Gazette 38641 dated 30 March 2015

The V Band

16B. Radio Frequency Spectrum Licence Exemption

- (1) The use of the V band is licence exempt provided that technical parameters reflected in Annex B are complied with.
- (2) The detailed frequency coordination is not required and there are no prescribed channel arrangements.
- (3) Single frequency (TDD) systems and two frequency (FDD) systems may use any channel.
- (4) The radio frequency spectrum fee is not applicable.”



57 – 64G	Point-to-point links	55 dBm e.i.r.p.	EN 305 550	The maximum transmitter output power is 10 dBm. The minimum antenna gain is 30 dBi
57 -66G	Multi-gigabit wireless systems (MGWS)	40 dBm e.i.r.p.	EN 302 567	The use of these systems is as described in ITU-R Report ITU-R M.2227 and Recommendation ITU-R M.2003. Fixed outdoor installations are not allowed.

For the last couple of years Comsol send correspondence to ICASA to get clarity on the exact guidelines for the use of V-Band deployments without getting any official feedback. Every time we ask a question it gets referred to a different department with no definite feedback provided.

Comsol would like to know if this band can be used for indoor as well as outdoor Point-to-Point and Point-to-Multipoint deployments?

Some departments within ICASA say it can be used for both Indoor as well as Outdoor deployments and some departments say it is for Indoor deployments only.

Comsol requests that the Authority ensure the aforementioned entries accurately reflect the position set out in the Regulations.

Conclusion

Comsol would welcome the opportunity to participate further in this process, either through attending public hearings or in writing, and hopes that its submissions will assist the Authority in refining the Draft NRFP 2021.

Regards,

COMSOL NETWORKS