

## Description of EPFD validation and results of examination

### Input parameters

#### Mask link data

Mask Id.	Direction	Minimum frequency, MHz	Maximum frequency, MHz	Linked orbit IDs / Satellite IDs
1	↓	10700	12750	All
7	↑	12750	14500	All
11	↔	10700	12750	All
5	↓	17700	18600	All
10	↑	27500	30000	All
12	↔	17800	18400	All
4	↓	19700	20200	All
9	↑	27500	30000	All

#### Frequency, mode of operation

Frequency, GHz	Direction	Mode of operation
10.7-12.75	↓	User
12.75-14.5	↑	User
10.7-12.75	↔	User
17.8 -18.6	↓	Gateway
17.8-18.4	↔	Gateway
27.5-28.6	↑	Gateway
19.7-20.2	↓	User
29.5-30	↑	User

#### Common SNS Data

##### Common

Band, mode of operation	A.4.b.7.d.1 Exclusion zone type	A.4.b.7.d.1 Exclusion zone size, degrees
all	Y - topocentric angle (earth based)	4

##### Orbits

Apogee/Perigee/Inclination	A.4.b.6.d Uses station keeping	A.4.b.6.e Uses specific precession
520/520/54.5 500/500/97.4 700/700/53.5 720/720/98.3 510/510/0 7000/7000/0	No keeping	Default

##### Uplink

Band, mode of operation	A.4.b.7.b Earth station density (1/km <sup>2</sup> )	A.4.b.7.c Average distance (km)	A.4.b.7.a number of satellites receiving simultaneously
Ka, Gateway	2,5E-07	200	10
Ka, user	1,11E-05	300	1
Ku, user	4E-06	500	1

##### Downlink

Band, mode of operation	A.4.b.6.a Number of satellites transmitting to any latitude within corresponding range		
	From latitude	To latitude	Number
Ka, Gateway	-90	90	10
Ka, user	-90	90	1
Ku, user	-90	90	1

##### Group table

Beam(s)	Direction	Minimum frequency, MHz	Maximum frequency, MHz	A.4.b.7.cbis Minimum elevation angle
U1KU, U2KU, U3KU	R	12750	14500	15
U1KA, U2KA, U3KA	R	27500	30000	15
U1KU, U2KU, U3KU	R	13750	14000	10

D4KA, D5KA	E	17800	18600	15
D1KA, D1KA7, D1KAM, D2KA, D2KA7, D2KAM, D3KA, D3KA7, D3KAM	E	17800	20200	15
D1KU, D1KU7, D1KUM, D2KU, D2KU7, D2KUM, D3KU, D3KU7, D3KUM	E	10700	12750	15

**Results**

<i>B1A</i> <i>Beam designation</i>	<i>B2</i> <i>Emi-Rcp</i>	<i>BR7a</i> <i>Group id./</i> <i>Target Group id.</i>	<i>GHz</i>	<i>Orbital planes id. no.</i>	<i>Mask ID</i>	<i>Article 22 Limit</i>	<i>Result</i>	<i>Article 22 Examination</i>
U1KA	R	321768526 / 121657027 321768527 / 121657028 321768528 / 121657029 321768529 / 121657030 321768530 / 121657031	27.5-28.6	1 - 74		TABLE 22-2	Pass	Favorable
U1KA	R	321768531 / 121657042 321768532 / 121657043 321768533 / 121657044 321768534 / 121657045 321768535 / 121657046	29.5-30	1 - 74		TABLE 22-2	Pass	Favorable
U1KU	R	321768536 / 121656901 321768537 / 121656902 321768538 / 121656903 321768539 / 121656904 321768540 / 121656905	12.75-13.25	1 - 74	7	TABLE 22-2	Pass	Favorable
U1KU	R	321768541 / 121656908 321768542 / 121656909 321768543 / 121656910 321768544 / 121656911 321768545 / 121656912	14-14.5	1 - 74	7	TABLE 22-2	Pass	Favorable
U1KU	R	321768546 / 121748398 321768547 / 121748399	13.778-14	1 - 74	7	TABLE 22-2	Pass	Favorable
U1KU	R	321768548 / 121748449 321768549 / 121748450	13.75- 13.772	1 - 74	7	TABLE 22-2	Pass	Favorable
U1KU	R	321768550 / 121748451 321768551 / 121748452	13.772- 13.778	1 - 74	7	TABLE 22-2	Pass	Favorable
U2KA	R	321768552 / 121657047 321768553 / 121657048 321768554 / 121657049 321768555 / 121657050 321768556 / 121657051	27.5-28.6	1 - 74		TABLE 22-2	Pass	Favorable
U2KA	R	321768557 / 121657062 321768558 / 121657063 321768559 / 121657064 321768560 / 121657065 321768561 / 121657066	29.5-30	1 - 74		TABLE 22-2	Pass	Favorable
U2KU	R	321768562 / 121656913 321768563 / 121656914 321768564 / 121656915 321768565 / 121656916 321768566 / 121656917	12.75-13.25	1 - 74	7	TABLE 22-2	Pass	Favorable
U2KU	R	321768567 / 121656920 321768568 / 121656921 321768569 / 121656922 321768570 / 121656923 321768571 / 121656924	14-14.5	1 - 74	7	TABLE 22-2	Pass	Favorable
U2KU	R	321768572 / 121748400 321768573 / 121748401	13.778-14	1 - 74	7	TABLE 22-2	Pass	Favorable
U2KU	R	321768574 / 121748453 321768575 / 121748454	13.75- 13.772	1 - 74	7	TABLE 22-2	Pass	Favorable
U2KU	R	321768576 / 121748455 321768577 / 121748456	13.772- 13.778	1 - 74	7	TABLE 22-2	Pass	Favorable
U3KA	R	321768578 / 121657067 321768579 / 121657068 321768580 / 121657069	27.5-28.6	1 - 74		TABLE 22-2	Pass	Favorable

		321768581 / 121657070 321768582 / 121657071						
U3KA	R	321768583 / 121657082 321768584 / 121657083 321768585 / 121657084 321768586 / 121657085 321768587 / 121657086	29.5-30	1 - 74		TABLE 22-2	Pass	Favorable
U3KU	R	321768588 / 121656925 321768589 / 121656926 321768590 / 121656927 321768591 / 121656928 321768592 / 121656929	12.75-13.25	1 - 74	7	TABLE 22-2	Pass	Favorable
U3KU	R	321768593 / 121656932 321768594 / 121656933 321768595 / 121656934 321768596 / 121656935 321768597 / 121656936	14-14.5	1 - 74	7	TABLE 22-2	Pass	Favorable
U3KU	R	321768598 / 121748402 321768599 / 121748403	13.778-14	1 - 74	7	TABLE 22-2	Pass	Favorable
U3KU	R	321768600 / 121748457 321768601 / 121748458	13.75- 13.772	1 - 74	7	TABLE 22-2	Pass	Favorable
U3KU	R	321768602 / 121748459 321768603 / 121748460	13.772- 13.778	1 - 74	7	TABLE 22-2	Pass	Favorable
D1KA	E	321768246 / 121656942 321768247 / 121656943 321768248 / 121656944 321768249 / 121656945 321768250 / 121656946	17.8-18.6	1 - 74		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D1KA	E	321768251 / 121656957 321768252 / 121656958 321768253 / 121656959 321768254 / 121656960 321768255 / 121656961	19.7-20.2	1 - 74		TABLE 22-1C	Pass	Favorable
D1KA7	E	321768256 / 121657302 321768257 / 121657303 321768258 / 121657304 321768259 / 121657305 321768260 / 121657306	17.8-18.6	39 - 72		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D1KA7	E	321768261 / 121657317 321768262 / 121657318 321768263 / 121657319 321768264 / 121657320 321768265 / 121657321	19.7-20.2	39 - 72		TABLE 22-1C	Pass	Favorable
D1KAM	E	321768266 / 121657092 321768267 / 121657093 321768268 / 121657094 321768269 / 121657095 321768270 / 121657096	17.8-18.6	74		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D1KAM	E	321768271 / 121657107 321768272 / 121657108 321768273 / 121657109 321768274 / 121657110 321768275 / 121657111	19.7-20.2	74		TABLE 22-1C	Pass	Favorable
D1KU	E	321768276 / 121656841 321768277 / 121656842 321768278 / 121656843 321768279 / 121656844 321768280 / 121656845	10.7-11.7	1 - 74	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D1KU	E	321768281 / 121656846 321768282 / 121656847 321768283 / 121656848 321768284 / 121656849 321768285 / 121656850 321768286 / 121656851 321768287 / 121656852 321768288 / 121656853 321768289 / 121656854 321768290 / 121656855	11.7-12.75	1 - 74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D1KU	E	321768291 / 121656856 321768292 / 121656857 321768293 / 121656858	11.7-12.7	1 - 74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A	Pass Pass Pass	Favorable

		321768294 / 121656859 321768295 / 121656860				TABLE 22-1D TABLE 22-3	Pass Pass	
D1KU7	E	321768296 / 121657327 321768297 / 121657328 321768298 / 121657329 321768299 / 121657330 321768300 / 121657331	10.7-11.7	39 - 72	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D1KU7	E	321768301 / 121657332 321768302 / 121657333 321768303 / 121657334 321768304 / 121657335 321768305 / 121657336 321768306 / 121657337 321768307 / 121657338 321768308 / 121657339 321768309 / 121657340 321768310 / 121657341	11.7-12.75	39 - 72	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D1KU7	E	321768311 / 121657342 321768312 / 121657343 321768313 / 121657344 321768314 / 121657345 321768315 / 121657346	11.7-12.7	39 - 72	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D1KUM	E	321768316 / 121657117 321768317 / 121657118 321768318 / 121657119 321768319 / 121657120 321768320 / 121657121	10.7-11.7	74	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D1KUM	E	321768321 / 121657122 321768322 / 121657123 321768323 / 121657124 321768324 / 121657125 321768325 / 121657126 321768326 / 121657127 321768327 / 121657128 321768328 / 121657129 321768329 / 121657130 321768330 / 121657131	11.7-12.75	74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D1KUM	E	321768331 / 121657132 321768332 / 121657133 321768333 / 121657134 321768334 / 121657135 321768335 / 121657136	11.7-12.7	74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D2KA	E	321768336 / 121656972 321768337 / 121656973 321768338 / 121656974 321768339 / 121656975 321768340 / 121656976	17.8-18.6	1 - 74		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D2KA	E	321768341 / 121656987 321768342 / 121656988 321768343 / 121656989 321768344 / 121656990 321768345 / 121656991	19.7-20.2	1 - 74		TABLE 22-1C	Pass	Favorable
D2KA7	E	321768346 / 121657352 321768347 / 121657353 321768348 / 121657354 321768349 / 121657355 321768350 / 121657356	17.8-18.6	39 - 72		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D2KA7	E	321768351 / 121657367 321768352 / 121657368 321768353 / 121657369 321768354 / 121657370 321768355 / 121657371	19.7-20.2	39 - 72		TABLE 22-1C	Pass	Favorable
D2KAM	E	321768356 / 121657142 321768357 / 121657143 321768358 / 121657144 321768359 / 121657145 321768360 / 121657146	17.8-18.6	74		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D2KAM	E	321768361 / 121657157 321768362 / 121657158 321768363 / 121657159 321768364 / 121657160 321768365 / 121657161	19.7-20.2	74		TABLE 22-1C	Pass	Favorable

D2KU	E	321768366 / 121656861 321768367 / 121656862 321768368 / 121656863 321768369 / 121656864 321768370 / 121656865	10.7-11.7	1 - 74	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D2KU	E	321768371 / 121656866 321768372 / 121656867 321768373 / 121656868 321768374 / 121656869 321768375 / 121656870 321768376 / 121656871 321768377 / 121656872 321768378 / 121656873 321768379 / 121656874 321768380 / 121656875	11.7-12.75	1 - 74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D2KU	E	321768381 / 121656876 321768382 / 121656877 321768383 / 121656878 321768384 / 121656879 321768385 / 121656880	11.7-12.7	1 - 74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D2KU7	E	321768386 / 121657377 321768387 / 121657378 321768388 / 121657379 321768389 / 121657380 321768390 / 121657381	10.7-11.7	39 - 72	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D2KU7	E	321768391 / 121657382 321768392 / 121657383 321768393 / 121657384 321768394 / 121657385 321768395 / 121657386 321768396 / 121657387 321768397 / 121657388 321768398 / 121657389 321768399 / 121657390 321768400 / 121657391	11.7-12.75	39 - 72	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D2KU7	E	321768401 / 121657392 321768402 / 121657393 321768403 / 121657394 321768404 / 121657395 321768405 / 121657396	11.7-12.7	39 - 72	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D2KUM	E	321768406 / 121657167 321768407 / 121657168 321768408 / 121657169 321768409 / 121657170 321768410 / 121657171	10.7-11.7	74	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D2KUM	E	321768411 / 121657172 321768412 / 121657173 321768413 / 121657174 321768414 / 121657175 321768415 / 121657176 321768416 / 121657177 321768417 / 121657178 321768418 / 121657179 321768419 / 121657180 321768420 / 121657181	11.7-12.75	74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D2KUM	E	321768421 / 121657182 321768422 / 121657183 321768423 / 121657184 321768424 / 121657185 321768425 / 121657186	11.7-12.7	74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D3KA	E	321768426 / 121657002 321768427 / 121657003 321768428 / 121657004 321768429 / 121657005 321768430 / 121657006	17.8-18.6	1 - 74		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D3KA	E	321768431 / 121657017 321768432 / 121657018 321768433 / 121657019 321768434 / 121657020 321768435 / 121657021	19.7-20.2	1 - 74		TABLE 22-1C	Pass	Favorable
D3KA7	E	321768436 / 121657402 321768437 / 121657403 321768438 / 121657404	17.8-18.6	39 - 72		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable

		321768439 / 121657405 321768440 / 121657406						
D3KA7	E	321768441 / 121657417 321768442 / 121657418 321768443 / 121657419 321768444 / 121657420 321768445 / 121657421	19.7-20.2	39 - 72		TABLE 22-1C	Pass	Favorable
D3KAM	E	321768446 / 121657192 321768447 / 121657193 321768448 / 121657194 321768449 / 121657195 321768450 / 121657196	17.8-18.6	74		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D3KAM	E	321768451 / 121657207 321768452 / 121657208 321768453 / 121657209 321768454 / 121657210 321768455 / 121657211	19.7-20.2	74		TABLE 22-1C	Pass	Favorable
D3KU	E	321768456 / 121656881 321768457 / 121656882 321768458 / 121656883 321768459 / 121656884 321768460 / 121656885	10.7-11.7	1 - 74	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D3KU	E	321768461 / 121656886 321768462 / 121656887 321768463 / 121656888 321768464 / 121656889 321768465 / 121656890 321768466 / 121656891 321768467 / 121656892 321768468 / 121656893 321768469 / 121656894 321768470 / 121656895	11.7-12.75	1 - 74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D3KU	E	321768471 / 121656896 321768472 / 121656897 321768473 / 121656898 321768474 / 121656899 321768475 / 121656900	11.7-12.7	1 - 74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D3KU7	E	321768476 / 121657427 321768477 / 121657428 321768478 / 121657429 321768479 / 121657430 321768480 / 121657431	10.7-11.7	39 - 72	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D3KU7	E	321768481 / 121657432 321768482 / 121657433 321768483 / 121657434 321768484 / 121657435 321768485 / 121657436 321768486 / 121657437 321768487 / 121657438 321768488 / 121657439 321768489 / 121657440 321768490 / 121657441	11.7-12.75	39 - 72	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D3KU7	E	321768491 / 121657442 321768492 / 121657443 321768493 / 121657444 321768494 / 121657445 321768495 / 121657446	11.7-12.7	39 - 72	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D3KUM	E	321768496 / 121657217 321768497 / 121657218 321768498 / 121657219 321768499 / 121657220 321768500 / 121657221	10.7-11.7	74	1, 11	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
D3KUM	E	321768501 / 121657222 321768502 / 121657223 321768503 / 121657224 321768504 / 121657225 321768505 / 121657226 321768506 / 121657227 321768507 / 121657228 321768508 / 121657229 321768509 / 121657230 321768510 / 121657231	11.7-12.75	74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable

D3KUM	E	321768511 / 121657232 321768512 / 121657233 321768513 / 121657234 321768514 / 121657235 321768515 / 121657236	11.7-12.7	74	1, 11	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D TABLE 22-3	Pass Pass Pass Pass Pass	Favorable
D4KA	E	321768516 / 121657467 321768517 / 121657468 321768518 / 121657469 321768519 / 121657470 321768520 / 121657471	17.8-18.6	1 - 74		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
D5KA	E	321768521 / 121657482 321768522 / 121657483 321768523 / 121657484 321768524 / 121657485 321768525 / 121657486	17.8-18.6	1 - 74		TABLE 22-1B TABLE 22-3	Pass Pass	Favorable

Notes:

1. Findings are promulgated as favorable when all applicable limits in Article 22 are met for given group of frequency assignments in all applicable scenarios.
2. The Result column can be either Pass or Fail (see Rec. ITU-R S.1503-2). N/A (Non Applicable) refers to the case when an applicable Article 22 limit is not examined in the current scenario.
3. Qualified Favorable is established due to continuous application of Resolution 85 (WRC-03) on request by the notifying administration.