

## Description of EPFD validation and results of examination

Downlink examination of frequency ranges 10.7 – 12.75 GHz, 17.8 – 18.6 GHz, 19.7 – 20.2 GHz

Inter-satellite examination of frequency ranges 10.7 – 12.75 GHz, 17.8 – 18.4 GHz

Uplink examination of frequency ranges 12.75 – 14.5 GHz, 27.5 – 28.6 GHz, 29.5 – 30 GHz

## Input parameters

### Mask link data Configuration 1, 2 and 3

Mask Id.	Direction	Minimum frequency, MHz	Maximum frequency, MHz	Linked orbit IDs / Satellite IDs	Configuration
1	↑	12500	14500	7 (sat IDs: All) 8 - 11 (sat IDs: All) 12 - 15 (sat IDs: All)	1 2 3
2	↑	27500	30000	1 - 15 (sat IDs: All)	1,2 3
3	↔	10700	12750	7 (sat IDs: All)	1,2 3
4	↔	17800	18400	7 (sat IDs: All)	1,2 3
5	↓	10700	12750	7 (sat IDs: All) 8 - 11 (sat IDs: All) 12 - 15 (sat IDs: All)	1 2 3
6	↓	17800	18600	7 (sat IDs: All)	1,2 3
7	↓	19700	20200	7 (sat IDs: All)	1,2 3
8	↔	10700	12750	8 - 11 (sat IDs: All) 12 - 15 (sat IDs: All)	2 3
9	↔	17800	18400	8 - 11 (sat IDs: All) 12 - 15 (sat IDs: All)	2 3
10	↓	17800	18600	8 - 11 (sat IDs: All) 12 - 15 (sat IDs: All)	2 3
11	↓	19700	20200	1 - 6 (sat IDs: All) 8 - 11 (sat IDs: All) 12 - 15 (sat IDs: All)	1 2 3
12	↑	12750	14500	1 - 6 (sat IDs: All)	1
13	↔	10700	12750	1 - 6 (sat IDs: All)	1
14	↔	17800	18400	1 - 6 (sat IDs: All)	1
15	↓	10700	12750	1 - 6 (sat IDs: All)	1
16	↓	17800	18600	1 - 6 (sat IDs: All)	1

### Common SNS Data

#### Common

A.4.b.7.d.1 Exclusion zone type	A.4.b.7.d.1 Exclusion zone size, degrees
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
1400/1400/90 8062/8062/0	Keeping	Default

#### Uplink

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
2.8182E-07	1883	1

#### Downlink

A.4.b.6.a Number of satellites transmitting to any latitude within corresponding range		
From latitude	To latitude	Number
-90	90	1

**Group table**

<i>Beam(s)</i>	<i>Direction</i>	<i>Minimum frequency, MHz</i>	<i>Maximum frequency, MHz</i>	<i>A.4.b.7.cbis Minimum elevation angle</i>
RKU2R	R	12750	14500	10
RKA2R	R	27500	30000	10
RKU1R	R	12750	14500	5
RKA1R	R	27500	30000	5
TKU3R	E	10700	12750	5
TKU1R	E	11700	12500	5
TKA3R	E	17800	20200	5
TKA1R	E	18400	20200	5
TKU2R	E	10700	12750	10
TKA2R	E	17800	20200	10

**Results Configuration 1**

<i>B1A Beam designation</i>	<i>B2 Emi-Rcp</i>	<i>BR7a Group id./ 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>
RKA1R	R	318704772 / 118628521 318704773 / 118628522 318704774 / 118628523 318704775 / 118628524 318704776 / 118628525 318704785 / 118628724 318704786 / 118628725 318704787 / 118628726 318704788 / 118628727 318704789 / 118628728	27.5-28.6	7	2	TABLE 22-2	Pass	Favorable
RKA1R	R	318704777 / 118628536 318704778 / 118628537 318704779 / 118628538 318704780 / 118628539 318704781 / 118628540 318704782 / 118628658 318704783 / 118628659 318704784 / 118628660 318704790 / 118628739 318704791 / 118628740	29.5-30	7	2	TABLE 22-2	Pass	Favorable
RKA2R	R	318704792 / 118628553 318704793 / 118628554 318704794 / 118628555 318704795 / 118628556 318704796 / 118628557 318704805 / 118628753 318704806 / 118628754 318704807 / 118628755 318704808 / 118628756 318704809 / 118628757	27.5-28.6	1 - 6	2	TABLE 22-2	Pass	Favorable
RKA2R	R	318704797 / 118628568 318704798 / 118628569 318704799 / 118628570 318704800 / 118628571 318704801 / 118628572 318704802 / 118628661 318704803 / 118628662 318704804 / 118628663 318704810 / 118628768 318704811 / 118628769	29.5-30	1 - 6	2	TABLE 22-2	Pass	Favorable
TKA1R	E	318704457 / 118628476 318704458 / 118628477 318704459 / 118628478	19.7-20.2	7	7, 11	TABLE 22-1C	Fail	Qualified favourable

		318704460 / 118628479 318704461 / 118628480 318704467 / 118628655 318704468 / 118628656 318704469 / 118628657 318704475 / 118628682 318704476 / 118628683						
TKA2R	E	318704482 / 118628590 318704483 / 118628591 318704484 / 118628592 318704485 / 118628593 318704486 / 118628594 318704500 / 118628787 318704501 / 118628788 318704502 / 118628789 318704503 / 118628790 318704504 / 118628791	17.8-18.1	1 - 6	4, 6, 14, 16	TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
TKA2R	E	318704487 / 118628600 318704488 / 118628601 318704489 / 118628602 318704490 / 118628603 318704491 / 118628604 318704497 / 118628664 318704498 / 118628665 318704499 / 118628666 318704505 / 118628797 318704506 / 118628798	19.7-20.2	1 - 6	7, 11	TABLE 22-1C	Fail	Qualified favourable
TKA3R	E	318750684 318750685 318750686 318750687 318750688 318750702 318750703 318750704 318750705 318750706	17.8-18.1	7	4, 6, 14, 16	TABLE 22-1B TABLE 22-3	Pass Pass	Favorable
TKA3R	E	318750689 318750690 318750691 318750692 318750693 318750699 318750700 318750701 318750707 318750708	19.7-20.2	7	7, 11	TABLE 22-1C	Fail	Qualified favourable
TKU1R	E	318704532 / 118628501 318704533 / 118628502 318704534 / 118628503 318704535 / 118628504 318704536 / 118628505 318704571 / 118628704 318704572 / 118628705 318704573 / 118628706 318704574 / 118628707 318704575 / 118628708 318704590 / 118628877 318704591 / 118628878 318704592 / 118628879 318704593 / 118628880 318704594 / 118628881 318704616 / 118628907 318704617 / 118628908 318704618 / 118628909 318704619 / 118628910 318704620 / 118628911	11.7-12.1	7	5, 15	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D	N/A Pass N/A Pass	Favorable
TKU2R	E	318704642 / 118628605 318704643 / 118628606 318704644 / 118628607 318704645 / 118628608 318704646 / 118628609 318704681 / 118628799	10.7-10.95	1 - 6	3, 5, 13, 15	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable

		318704682 / 118628800 318704683 / 118628801 318704684 / 118628802 318704685 / 118628803						
TKU2R	E	318704662 / 118628625 318704663 / 118628626 318704664 / 118628627 318704665 / 118628628 318704666 / 118628629 318704701 / 118628819 318704702 / 118628820 318704703 / 118628821 318704704 / 118628822 318704705 / 118628823 318704720 / 118628953 318704721 / 118628954 318704722 / 118628955 318704723 / 118628956 318704724 / 118628957 318704746 / 118628983 318704747 / 118628984 318704748 / 118628985 318704749 / 118628986 318704750 / 118628987	11.7-12.1	1 - 6	5, 15	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D	N/A Pass N/A Pass	Favorable
TKU3R	E	318750734 318750735 318750736 318750737 318750738 318750773 318750774 318750775 318750776 318750777	10.7-10.95	7	3, 5, 13, 15	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Pass	Favorable
TKU3R	E	318750754 318750755 318750756 318750757 318750758 318750793 318750794 318750795 318750796 318750797 318750812 318750813 318750814 318750815 318750816 318750838 318750839 318750840 318750841 318750842	11.7-12.1	7	5, 15	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D	N/A Pass N/A Pass	Favorable

### Results Configuration 2

<i>B1A</i> <i>Beam designation</i>	<i>B2</i> <i>Emi-Rcp</i>	<i>BR7a</i> <i>Group id./ 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>
RKA1R	R	318704772 / 118628521 318704773 / 118628522 318704774 / 118628523 318704775 / 118628524 318704776 / 118628525 318704785 / 118628724 318704786 / 118628725 318704787 / 118628726 318704788 / 118628727 318704789 / 118628728	27.5-28.6	7 - 11	2	TABLE 22-2	Pass	Favorable
RKA1R	R	318704777 / 118628536 318704778 / 118628537	29.5-30	7 - 11	2	TABLE 22-2	Pass	Favorable

		318704779 / 118628538 318704780 / 118628539 318704781 / 118628540 318704782 / 118628658 318704783 / 118628659 318704784 / 118628660 318704790 / 118628739 318704791 / 118628740						
TKA1R	E	318704457 / 118628476 318704458 / 118628477 318704459 / 118628478 318704460 / 118628479 318704461 / 118628480 318704467 / 118628655 318704468 / 118628656 318704469 / 118628657 318704475 / 118628682 318704476 / 118628683	19.7-20.2	7 - 11	7, 11	TABLE 22-1C	Fail	Qualified Favourable
TKA3R	E	318750684 318750685 318750686 318750687 318750688 318750702 318750703 318750704 318750705 318750706	17.8-18.1	7	4, 6, 9, 10	TABLE 22-1B TABLE 22-3	Pass Fail	Unfavorable
TKA3R	E	318750689 318750690 318750691 318750692 318750693 318750699 318750700 318750701 318750707 318750708	19.7-20.2	7	7, 11	TABLE 22-1C	Fail	Qualified Favourable
TKU1R	E	318704532 / 118628501 318704533 / 118628502 318704534 / 118628503 318704535 / 118628504 318704536 / 118628505 318704571 / 118628704 318704572 / 118628705 318704573 / 118628706 318704574 / 118628707 318704575 / 118628708 318704590 / 118628877 318704591 / 118628878 318704592 / 118628879 318704593 / 118628880 318704594 / 118628881 318704616 / 118628907 318704617 / 118628908 318704618 / 118628909 318704619 / 118628910 318704620 / 118628911	11.7-12.1	7 - 11	5	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D	N/A Pass N/A Pass	Favorable
TKU3R	E	318750734 318750735 318750736 318750737 318750738 318750773 318750774 318750775 318750776 318750777	10.7-10.95	7	3, 5, 8	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Fail	Unfavorable
TKU3R	E	318750754 318750755 318750756 318750757 318750758	11.7-12.1	7	5	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D	N/A Pass N/A Pass	Favorable

		318750793 318750794 318750795 318750796 318750797 318750812 318750813 318750814 318750815 318750816 318750838 318750839 318750840 318750841 318750842						
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### Results Configuration 3

<i>B1A</i>  <i>Beam designation</i>	<i>B2</i>  <i>Emi-Rcp</i>	<i>BR7a</i>  <i>Group id./ 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>
RKA1R	R	318704772 / 118628521 318704773 / 118628522 318704774 / 118628523 318704775 / 118628524 318704776 / 118628525 318704785 / 118628724 318704786 / 118628725 318704787 / 118628726 318704788 / 118628727 318704789 / 118628728	27.5-28.6	7, 12 - 15	2	TABLE 22-2	Pass	Favorable
RKA1R	R	318704777 / 118628536 318704778 / 118628537 318704779 / 118628538 318704780 / 118628539 318704781 / 118628540 318704782 / 118628658 318704783 / 118628659 318704784 / 118628660 318704790 / 118628739 318704791 / 118628740	29.5-30	7, 12 - 15	2	TABLE 22-2	Pass	Favorable
TKA1R	E	318704457 / 118628476 318704458 / 118628477 318704459 / 118628478 318704460 / 118628479 318704461 / 118628480 318704467 / 118628655 318704468 / 118628656 318704469 / 118628657 318704475 / 118628682 318704476 / 118628683	19.7-20.2	7, 12 - 15	7, 11	TABLE 22-1C	Fail	Qualified Favourable
TKA3R	E	318750684 318750685 318750686 318750687 318750688 318750702 318750703 318750704 318750705 318750706	17.8-18.1	7	4, 6, 9, 10	TABLE 22-1B TABLE 22-3	Pass Fail	Unfavorable
TKA3R	E	318750689 318750690 318750691 318750692 318750693 318750699 318750700 318750701	19.7-20.2	7	7, 11	TABLE 22-1C	Fail	Qualified Favourable

		318750707 318750708						
TKU1R	E	318704532 / 118628501 318704533 / 118628502 318704534 / 118628503 318704535 / 118628504 318704536 / 118628505 318704571 / 118628704 318704572 / 118628705 318704573 / 118628706 318704574 / 118628707 318704575 / 118628708 318704590 / 118628877 318704591 / 118628878 318704592 / 118628879 318704593 / 118628880 318704594 / 118628881 318704616 / 118628907 318704617 / 118628908 318704618 / 118628909 318704619 / 118628910 318704620 / 118628911	11.7-12.1	7, 12 - 15	5	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D	N/A Pass N/A Pass	Favorable
TKU3R	E	318750734 318750735 318750736 318750737 318750738 318750773 318750774 318750775 318750776 318750777	10.7-10.95	7	3, 5, 8	RR 22.5C4 TABLE 22-1A TABLE 22-3	Pass Pass Fail	Unfavorable
TKU3R	E	318750754 318750755 318750756 318750757 318750758 318750793 318750794 318750795 318750796 318750797 318750812 318750813 318750814 318750815 318750816 318750838 318750839 318750840 318750841 318750842	11.7-12.1	7	5	RR 22.5C4 RR 22.5C8 TABLE 22-1A TABLE 22-1D	N/A Pass N/A 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.