

**Validation Rules for a geostationary-satellite network  
in the broadcasting-satellite service under Appendix 30 (Articles 4 and 5) and  
feeder-link under Appendix 30A (Articles 4 and 5),  
in the space operation functions under Article 2A of the Appendices 30 and 30A  
and in the fixed-satellite service under Appendix 30B (Articles 6, 7<sup>1</sup> and 8)  
Form of Notice - Ap4/II (Appendix 4 - Annex 2)**

The validation rules are specified in tabular form. These rules apply to ADD and MOD transactions. SUP transactions need no validation. A description of the various columns of the table are given below :

Name of column	Description of column
Val. Item No.	This is a unique number (in increasing sequence) that is allocated to each data-item that has been considered for validation. There are gaps in the numbering sequence to allow for additional data-items that may be added in the corresponding tables. The description of each data-item can be found in the Chapter 1 of Section III of the Preface to the BR IFIC (Space Services). The 'table name' and 'field name' values provided in the next two columns, along with the 'Ap4 Ref.', can be used to locate the description of the data-item in the above-mentioned document.
Table Name	The name of the table in the SRS (or SNS or SPS) database containing this data-item is provided here.
Field Name	This column contains the name of the field in the specified table (see Table Name) that contains the value of this data-item.
Ap4 Ref.	The provision number of the data-item in Annex 2 of Appendix 4 of the Radio Regulations is provided in this column - this is the same number that is on the form of notice for the data-item. Only items with symbols <b>X</b> and <b>+</b> are presently validated.
Data Format	The format of the data-item is described here. This is the format that is accepted by the Data Capture software SpaceCap and is described in the Chapter 1 of Section III of the Preface to the BR IFIC (Space Services). It is provided here as reference.
Validation Rules	<p>The checks that are to be executed on each data-item are specified here. They are sequentially numbered from 1 (the validation rule number) and each validation rule is uniquely identified by its 'Val. Item No.' and the validation rule number. Rules with numbers greater than 3 have a letter before the rule (C, D, E, P, G) indicating the type of validation check, as explained below:</p> <p style="padding-left: 20px;">C : cross-check validation; the value of this data-item is to be checked against the values of other data-items  D : duplicate check; this data-item cannot contain duplicate values as indicated in the validation rule  E : extended check; the validation rule specifies a complex validation check on this data-item, involving calculations with other data-items  P : dependency check; this data-item may be provided only if other data-items are provided / not provided.  G : cross-validation with GIMS for geostationary space station. The value of the data item is compared to corresponding item in GIMS mdb format. In the validation report, the Validation item no. corresponding to a GIMS Cross Validation error will be <i>9000</i></p> <p>At the end of each validation rule, there is a symbol in parentheses; this indicates the severity of the error if the rule fails. The error levels are :</p> <p style="padding-left: 20px;">F the error is fatal and the transaction cannot pass validation if any fatal errors exist.  W this is a warning to the user to check the flagged data item. A transaction with "warnings" can proceed further in the processing, if the user desires.</p> <p>Reference is made in some of the rules to certain tables in the Preface which is the Preface to the International Frequency list and BR IFIC DVD ROM.</p> <p>In some cases, the validation rule contains a check that is described with reference to a table in the Annex of this document.</p> <p>For data-items that are required only for certain Notice Types (see above), a general rule no. 0 (see item 9999, rule 0) is used to indicate that the value should not be provided for other Notice Types as indicated in the error message.</p>

<sup>1</sup> Cf. Plan Validation Rules for submission notices under AP30B Art. 7

## Plan Validation Rules

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
1	notice	ntc_id		9(9)	<p>1: mandatory - BR internal validation (F)</p> <p>2: must be numeric value between 76500000 and 399999999 (W)</p> <p>3: E: the value represented by the last 6 digits must be greater than 500000 - BR internal validation (F)</p> <p>4: E: check against item 11; 1st digit should be "0" (prior to 2000) or "1" (2000 or after) - BR internal validation (F)</p> <p>5: E: the 2nd and 3rd digits must be equal to the year portion (last 2 digits) of item 11 - BR internal validation (F)</p> <p>6.1: E: 4th to 6th digit have to be "552" or "554" if submission under Art.4 and plan_id is 00DN or 00UP - BR internal validation (F)</p> <p>6.2: E: 4th to 6th digit have to be "555" if submission under Art.4 and plan_id is 30_2 - BR internal validation (F)</p> <p>6.3: E: 4th to 6th digit have to be "560" if submission under Art.5 - BR internal validation (F)</p> <p>6.4: E: 4th to 6th digit have to be "558" or "559" if submission under AP30B - BR internal validation (F)</p> <p>6.5: E: 4th to 6th digit have to be "556" if submission under Art.2A of AP30/30A (coordination) - BR internal validation (F)</p>
2	notice	ntc_type		X(1)	<p>1: mandatory (F)</p> <p>2: symbol must be "G" (F)</p>
3	notice	adm_ref_id		X(20)	1: for administration use, not to be validated
4	notice	d_adm		9(8)	<p>1: for administration use, not to be validated</p> <p>2: must be a valid date (W)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
5	notice	prov		X(12)	<p>1: mandatory (F)</p> <p>2: the symbol must be one of "4.1.3", "4.1.26", "4.1.27", "4.1.12", "4.1.23", "4.2.6", "4.2.16", "4.2.24", "RS548", "30-30A#5.2.2", "5.1.2/5.1.6", "A30#5.2.2", "5.1.2", "A30A#5.2.2", "5.1.6", "5.3.2", "A30-30A", "11.2", "6.1", "6.38", "6.54", "6.57", "A30B#6.1A", "A30B#6.1M", "A30B#6.1C", "A30B#6.1T", "A30B#6.17", "A30B#6.25", "A30B#6.30", "7.2", "A30B#7.2", "8.1", "A30B#8.1"</p> <p>- if none of these, then validation is stopped (F)</p>
6	notice	act_code		X(1)	<p>1: mandatory (F)</p> <p>2: the symbol must be "A" for addition, "M" for modification or "S" for suppression (F)</p> <p>3: C: if this item = "S" or "M", then item 10 must be provided (F)</p> <p>4: E: if this item = "M" or "S", then items 100 and 101 must be provided (F)</p>
7	notice	adm	A1f1	X(3)	<p>1: mandatory (F)</p> <p>2: the symbol must be present in the reference table "rf_adm" containing valid symbols for administrations; this corresponds to table 1A in the Preface (F)</p> <p>G: if geostationary, this item should match the administration symbol in the GIMS mdb (W)</p>
8	notice	ntwk_org	A1f3	X(3)	<p>1: optional (W)</p> <p>2: the symbol must be present in the reference table "rf_sat_org" containing valid symbols for satellite organizations; this corresponds to table 2 in the Preface (F)</p> <p>3: E: check with item 7; must be a valid symbol for the notifying administration as indicated in table 2 in the Preface (F)</p>
9	notice	ntf_occurs		X(1)	<p>1: mandatory for AP30/30A - BR internal validation (F)</p> <p>2: the symbol must be "A" (F)</p>
10	notice	tgt_ntc_id		9(9)	<p>1: conditionally required (W)</p> <p>2: must be a numeric value between 57500000 and 399999999 (W)</p> <p>3: C: this item must be provided if item 6 = "S" or "M" (F)</p>
11	notice	d_rcv		9(8)	<p>1: mandatory - BR internal validation (F)</p> <p>2: must be a valid date, later than 1 January 1979 (inclusive) and prior to date of validation-run (exclusive) (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
13	notice	ntf_rsn		X(1)	<p>1: mandatory (F)</p> <p>2: the symbol must be "B", "P" or "N"; check against item 5 for the corresponding values (F)</p> <p>3.1: C: if value is "B", item 5 should be one of "4.1.3", "4.1.26", "4.1.27", "4.2.6", "4.1.12", "4.2.16", "4.1.23", "4.2.24", "RS548" or "A30-30A (F)</p> <p>3.2: C: if value is "P", item 5 should be one of "6.1", "6.38", "6.54", "6.57", "A30B#6.1A", "A30B#6.1M", "A30B#6.1C", "A30B#6.1T", "A30B#6.17", "A30B#6.25", "A30B#6.30", "7.2" or "A30B#7.2" (F)</p> <p>3.3: C: if value is "N", item 5 should be one of "30-30A#5.2.2", "5.1.2/5.1.6", "A30#5.2.2", "5.1.2", "A30A#5.2.2", "5.1.6", "5.3.2", "11.2", "A30B#8.1" (F)</p> <p>G: if geostationary, this item should match the notification reason in GIMS mdb (W)</p>
14	notice	st_cur		X(1)	<p>1: mandatory - BR internal validation (F)</p> <p>2: symbol must be present in the Status Code Reference Table "rf_status" (F)</p>
15	notice	plan_id		X(5)	<p>1: mandatory for AP30/30A (F)</p> <p>2: the symbol must be one of "30_2", "00DN", "00UP" (F)</p>
18	notice	f_aa_type		X(1)	1: optional; BR Internal validation (W)
19	notice	f_adm_proxi	A1f2	X(1)	<p>1: optional (W)</p> <p>2: the symbol must be "Y" or blank (F)</p>
40	attch	attch_no		9(3)	1: optional; used in electronic notices to provide attachments; not validated
41	attch	attch_type		X(1)	1: optional; used in electronic notices to provide attachments; not validated
42	attch	file_name		X(8)	1: optional; used in electronic notices to provide attachments; not validated
43	attch	extension		X(3)	1: optional; used in electronic notices to provide attachments; not validated
44	attch	text		X(255)	1: optional; used in electronic notices to provide attachments; not validated
50	adm_asso	adm	A1f2	X(3)	<p>1: conditionally required (W)</p> <p>2: the symbol must be present in the reference table "rf_adm" containing valid symbols for administrations; this corresponds to table 1A in the Preface (F)</p> <p>3: C: if any symbol is provided, then item 19 (f_adm_proxy) must be = "Y" (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
100	geo	sat_name	A1a	X(20)	<p>1: mandatory (F)</p> <p>2: E: If the symbol is not present in the satellite name reference table "rf_sat_name", then action-code (item 6) must be = "A" (W); if action-code = "M" or "S", then the severity of the error is (F)</p> <p>G: This item should match the name of the satellite in the GIMS mdb (W)</p>
101	geo	long_nom	A4a1	S9(3).9(2)	<p>1: mandatory (F)</p> <p>2: must be numeric value in degrees between -179.99 (inclusive) and +180.00 (inclusive) (F)</p> <p>3: E: this item, along with item 100 and item 2, should match the corresponding entry in the reference table "rf_sat_name" (W); if action-code (item 6) = "M" or "S", then the severity of the error is F.</p> <p>4: for AP30 Reg. 1&amp;3 Plan (item 15 = 00DN), based on the assigned frequency (item 752), check conformity with orbital limitations of annex 7 to that Appendix. In the band 11.7-12.2GHz:</p> <p>4.1: E: no orbital position further west than 37.2W and further east than 146.0E (if service area overlaps Region 1, to be verified by the user) (W)</p> <p>4.2: E: no orbital position in the arc 37.2W to 10.0E except at the positions indicated in Table 1 of Annex 7 to AP30 (F)</p> <p>4.3: E: EIRP check: if orbital position in the minor arc 37.2W to 10.0E and not in Table 2 then EIRP (i.e. <math>\text{emiss.pep\_max} + \text{s\_beam.gain} \leq 56\text{dBW}</math>) (F)</p> <p>5: for AP30 Reg. 2 Plan (item 15 = 30_2), based on the assigned frequency (item 752), check conformity with orbital limitations of annex 7 to that Appendix:</p> <p>5.1: E: in the band 12.2-12.5 GHz, no orbital position further west than 175.2W and further east than 44.0W, except orbital positions of the Reg.2 Plan (see § A.2 to Annex 7 of AP30) (W)</p> <p>5.2: E: in the band 12.5-12.7 GHz, no orbital position further west than 175.2W and further east than 54.0W, except orbital positions of the Reg.2 Plan (see § A.2 to Annex 7 of AP30) (W)</p> <p>G: This item should match the nominal longitude in the GIMS mdb (W)</p>
102	geo	tol_east	A4a2a	9(1).9(2)	<p>1: mandatory (F)</p> <p>2: must be a numeric value between 0.00 (inclusive) and 0.10 (inclusive) (F)</p>
103	geo	tol_west	A4a2b	9(1).9(2)	<p>1: mandatory (F)</p> <p>2: must be a numeric value between 0.00 (inclusive) and 0.10 (inclusive) (F)</p>
104	geo	inclin_exc	A4a2c	9(1).9(2)	<p>1: mandatory for AP30B and Art.2A of AP30/30A (F)</p> <p>2: must be a numeric value between 0.00 (inclusive) and 15.0 (inclusive) (W)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
150	strap	strp_id	D1	9(4)	<p>1: optional for Art. 2A of AP30/30A (W)</p> <p>2: must be a numeric value between 1 (inclusive) and 9999 (inclusive) (F)</p> <p>3: there must be no duplicate values in the set of values for this item (F)</p> <p>4: E: this strap-id value must be present in at least one of the ranges of strap-id numbers represented by items 162 and 163 (F)</p>
151	strap	act_code	D1	X(1)	<p>1: optional for Art. 2A of AP30/30A (W)</p> <p>2: the symbol must be "A" , "R" , "S" or blank (F)</p> <p>3: C: if this item is not blank, then item 6 must be "M" (F)</p>
152	strap	beam_up	D1a1a	X(4)	<p>1: optional for Art. 2A of AP30/30A (W)</p> <p>2: must be a non-blank alphanumeric symbol (F)</p> <p>3: E: the symbol must be a valid receiving satellite beam; this is checked by verifying that this beam name is found in item 501 where item 500 is "R" (F)</p>
153	strap	beam_dn	D1a2a	X(4)	<p>1: optional for Art. 2A of AP30/30A (W)</p> <p>2: must be a non-blank alphanumeric symbol (F)</p> <p>3: E: the symbol must be a valid transmitting satellite beam; this is checked by verifying that this beam name is found in item 501 where item 500 is "E" (F)</p>
154	strap	freq_symup	D1a1b	X(1)	<p>1: optional for Art. 2A of AP30/30A (W)</p> <p>2: the symbol must be "K", "M" or "G" (F)</p> <p>3: check this symbol against frequency value in item 155 (F)</p> <p>3.1: C: if this item is "K", then the value in item 155 should be between 5000 (exclusive) and 27500 (inclusive) (F)</p> <p>3.2: C: if this item is "M", then the value in item 155 should be between 27.5 (exclusive) and 10500 (inclusive) (F)</p> <p>3.3: C: if this item is "G", then the value in item 155 should be between 10.5 (exclusive) and 400 (inclusive) (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
155	strap	freq_up	D1a1b	9(5).9(5)	<p>1: optional for Art. 2A of AP30/30A (W)</p> <p>2: must be a numeric value between 10.5 (inclusive) and 27500 (inclusive) (F)</p> <p>3: E: uplink frequency / symbol (items 154/155) must be a valid assigned frequency (items 721/722) for the receiving satellite beam specified in item 152 (F)</p> <p>4: E: if at least one assigned frequency in a group is strapped, then all the assigned frequencies in the group must be strapped (F)</p>
156	strap	freq_symdn	D1a2b	X(1)	<p>1: optional for Art. 2A of AP30/30A (W)</p> <p>2: the symbol must be "K", "M" or "G" (F)</p> <p>3: check this symbol against frequency value in item 157 (F)</p> <p>3.1: C: if this item is "K", then the value in item 157 should be between 5000 (exclusive) and 27500 (inclusive) (F)</p> <p>3.2: C: if this item is "M", then the value in item 157 should be between 27.5 (exclusive) and 10500 (inclusive) (F)</p> <p>3.3: C: if this item is "G", then the value in item 157 should be between 10.5 (exclusive) and 400 (inclusive) (F)</p>
157	strap	freq_dn	D1a2b	9(5).9(5)	<p>1: optional for Art. 2A of AP30/30A (W)</p> <p>2: must be a numeric value between 10.5 (inclusive) and 27500 (inclusive) (F)</p> <p>3: E: downlink frequency / symbol (items 156/157) must be a valid assigned frequency (items 721/722) for the transmitting satellite beam specified in item 153 (F)</p> <p>4: E: if at least one assigned frequency in a group is strapped, then all the assigned frequencies in the group must be strapped (F)</p> <p>5: D: the strapped link represented by the uplink beam (item 152), uplink frequency (items 154/155), downlink beam (item 153) and downlink frequency (items 156/157) must not be duplicated in the set of the strap records (F)</p> <p>6: E: each emission (item 671) belonging to an uplink group which is strapped should appear in at least one downlink group to which this uplink group is strapped and vice versa - to be done only for planned networks (W)</p>
160	ngma	ngma_id	D2	9(4)	<p>1: conditionally required (W)</p> <p>2: must be a numeric value between 1 (inclusive) and 9999 (inclusive) (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
161	ngma	act_code	D2	X(1)	1: conditionally required (W) 2: the symbol must be "A", "R", "S" or blank (F)
162	ngma	strp_id_fr	D2	9(4)	1: conditionally required (W) 2: must be a numeric value between 1 (inclusive) and 9999 (inclusive) (F)
163	ngma	strp_id_to	D2	9(4)	1: conditionally required (W) 2: must be a numeric value between 1 (inclusive) and 9999 (inclusive) (F)
164	ngma	noise_t_lo	D2a1	9(7)	1: conditionally required (W) 2: must be a numeric value between 0 (exclusive) and 9999999 (inclusive) (F)
165	ngma	gain_as_lo	D2a2	S9(2).9(1)	1: conditionally required (W) 2: must be a numeric value between -40 (inclusive) and 99.9 (inclusive) (W)
166	ngma	noise_t_hr	D2b1	9(7)	1: conditionally required (W) 2: must be a numeric value between 0 (exclusive) and 9999999 (inclusive) (F)
167	ngma	gain_as_hr	D2b2	S9(2).9(1)	1: conditionally required (W) 2: must be a numeric value between -40 (inclusive) and 20 (inclusive) (W)
168	ngma	stn_name	D2	X(20)	1: conditionally required (W) 2: must be a non-blank alphanumeric symbol (F)
500	s_beam	emi_rcp	B2	X(1)	1: mandatory (F) 2: the symbol must be "E" (emission) or "R" (reception) (F)
501	s_beam	beam_name	B1a	X(8)	1: mandatory (F) 2: must be a non-blank alphanumeric symbol (F) G: if geostationary, check that all diagrams for that beam have been provided in GIMS mdb format according to Appendix 6 of the Annex (W)
504	s_beam	gain	B3a1	S9(2).9(1)	1: mandatory (F) 2: must be a numeric value between -3 (inclusive) and 55 (inclusive) (W) 3: E: for elliptical beam, the difference between the co-polar value and the default value $(10 * \text{Log}(27843 / (\text{maj\_axis} * \text{min\_axis})))$ must be $\leq 0.1$ dB (W)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
505	s_beam	pnt_acc	B3d	9(1).9(2)	1: conditionally required for AP30/30A and AP30B (W) and mandatory for Art2A of AP30/30A (F) 2: must be a numeric value between 0.00 (inclusive) and 0.10 (inclusive) (W)
506	s_beam	diag_gain	B3b1	9(2)	1: conditionally required (W) 2: must be a numeric value between 1 (inclusive) and 99 (inclusive) (F)
507	s_beam	diag_orb_e	B3e	9(2)	1: conditionally required (W) 2: must be a numeric value between 1 (inclusive) and 99 (inclusive) (F)
509	s_beam	diag_e	B3c1a	9(2)	1: conditionally required (W) 2: must be a numeric value between 1 (inclusive) and 99 (inclusive) (F)
512	s_beam	f_steer	B1b	X(1)	1: conditionally required (W) 2: the symbol must be "Y" (if steerable beam) or blank (F)
513	s_beam	diag_e_x	B3c2a	9(2)	1: conditionally required (W) 2: must be a numeric value between 1 (inclusive) and 99 (inclusive) (F)
514	s_beam	pattern_id	B3c1	9(4)	1: conditionally required (W) 2: must be numeric value between 1 (inclusive) and 9999 ( inclusive) (F) 3: C: this item must be provided for elliptical beams (item 533, maj_axis, is provided) (F) 4: E: value must exist as a primary key in the antenna pattern reference table <ant_type> (F)
515	s_beam	pattern_id_x	B3c2	9(4)	1: conditionally required for AP30/30A (W) 2: must be numeric value between 1 (inclusive) and 9999 ( inclusive) (F) 3: C: this item must be provided for elliptical beams (item 514 is provided) (F) 4: C: if this item is provided, then item 506 must not contain a value (F) 5: E: value must exist as primary key in the antenna pattern reference table <ant_type> (F)
516	s_beam	prot_ratio	C12a	9(3).9(2)	1: optional for AP30B (W) 2: must be empty or a numeric value < 21 (F)
531	s_beam	bore_long	B3f1a	S9(3).99	1: mandatory for AP30/30A or AP30B (F) 2: E: boresight location must be visible from the satellite (i.e. elevation angle must be >=0) (W)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
532	s_beam	bore_lat	B3f1b	S9(3).99	1: mandatory for AP30/30A or AP30B (F) 2: must be numeric value between -81.31 (inclusive) and 81.31 (inclusive) (F)
533	s_beam	maj_axis	B3f2c	99.99	1: conditionally required for AP30/30A and AP30B (W) 2: must be a numeric value (W) 3: C: this item must be provided for elliptical beams (item 514 is provided) (F) 4: for AP30B: 4.1: E: 6/4GHz band, value must be in range 1.60 (W) to 17.38 (W) 4.2: E: 13/10-11GHz band, value must be in range 0.80 (W) to 17.38 (W) 5: for AP30/30A: 5.1: E: AP30/30A R1&3 or AP30A R2, value must be in range 0.60 (F) to 17.38 (W) 5.2: E: AP30 R2, value must be in range 0.80 (F) to 17.38 (W)
534	s_beam	min_axis	B3f2d	99.99	1: conditionally required for AP30/30A and AP30B (W) 2: must be a numeric value (W) 3: C: this item must be provided for elliptical beams (item 514 is provided) (F) 4: C: value must be less than or equal to item 533 (maj_axis) (F) 5: for AP30B: 5.1: E: 6/4GHz band, value must be in range 1.60 (W) to 17.38 (W) 5.2: E: 13/10-11GHz band, value must be in range 0.80 (W) to 17.38 (W) 6: for AP30/30A: 6.1: E: AP30/30A R1&3 or AP30A R2, value must be in range 0.60 (F) to 17.38 (W) 6.2: E: AP30 R2, value must be in range 0.80 (F) to 17.38 (W)
535	s_beam	orient	B3f2b	S9(3).99	1: conditionally required for AP30/30A and AP30B (W) 2: value must be between 0.00 (inclusive) and 179.99 (inclusive) (F) 3: C: this item must be provided for elliptical beams (item 514 is provided) (F)
536	s_beam	rot_acc	B3f2a	9.99	1: conditionally required for AP30/30A and AP30B (W) 2: value must be between 0.00 (inclusive) and 1.00 (inclusive) (W) 3: C: this item must be provided for elliptical beams (item 514 is provided) (F)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
537	s_beam	gain_x	B3a2	99.9	1: conditionally required for AP30/30A (W) 2: value must be between -10 (inclusive) and 30 (inclusive) (W) 3: C: this item must be provided for non-elliptical beams (item 514 is not provided) (F) 4: C: value must be less than or equal to that of item 504 (gain) (F)
538	s_beam	diag_gainx	B3b2	9(2)	1: conditionally required (W) 2: must be a numeric value between 1 (inclusive) and 99 (inclusive) (F)
539	s_beam	freq_min	C1	9(6).9(6)	1: mandatory for AP30B (F) 2: must be a numeric value (F). See Appendix 2b of the Annex 3: E: if item 500 (emi_rcp) = "R", value must be 6725 to 7025 MHz (6/4GHz band) or 12750 to 13250 MHz (13/10-11GHz band) (F) 4: E: if item 500 (emi_rcp) = "E", value must be 4500 to 4800 MHz (6/4GHz band), 10700 to 10950 MHz or 11200 to 11450 MHz (13/10-11GHz band) (F)
540	s_beam	freq_max	C1	9(6).9(6)	1: mandatory for AP30B (F) 2: must be a numeric value (F). See Appendix 2b of the Annex 3: E: if item 500 (emi_rcp) = "R", value must be 6725 to 7025 MHz (6/4GHz band) or 12750 to 13250 MHz (13/10-11GHz band) (F) 4: E: if item 500 (emi_rcp) = "E", value must be 4500 to 4800 MHz (6/4GHz band), 10700 to 10950 MHz or 11200 to 11450 MHz (13/10-11GHz band) (F)
600	grp	grp_id		9(9)	1: mandatory - BR internal validation (F) 2: must be a numeric value between 1 (inclusive) and 999999999 (inclusive) (F) 3: D: value must be unique in the set of all grp_id values (F)
601	grp	act_code		X(1)	1: conditionally required (W) 2: the symbol must be "A", "M", "S" or blank (F) 3: C: if this item is not blank, then item 502 must be "M" (F)
602	grp	page_no		9(4)	1: optional (W) 2: must be a numeric value - for BR internal use (W)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
603	grp	d_inuse	A2a	9(8)	<p>1: mandatory (F)</p> <p>2: must be a valid date (F)</p> <p>3: For AP30/30A - BR internal validation:</p> <p>3.1: E: for Article 4, after the date of receipt (W)</p> <p>3.2: E: for Article 4, no more than 8 years after the date of receipt (F)</p> <p>3.3: E: for Article 5, within 3 months and 3 years after the date of receipt (F)</p> <p>4: For AP30B - BR internal validation:</p> <p>4.1: E: for Article 6, within 2 years and 8 years after the date of receipt (F)</p> <p>4.2: E: for Article 8, no more than 3 years after the date of receipt (F)</p> <p>5: For AP30-30A Article2A - BR internal validation:</p> <p>5.1: E: if item 13 = "N", this date must not be later than the date of receipt plus three years (F)</p> <p>5.2: E: if item 13 = "N", this date must not be earlier than the date of receipt minus 3 months (W)</p> <p>5.3: E: if item 13 = "B", this date must not be later than the date of receipt plus six years and 6 months (W)</p> <p>5.4: E: if item 13 = "B", this date must not be earlier than the date of receipt (W)</p>
604	grp	prd_valid	A2b	9(2)	<p>1: mandatory for Art.2A of Ap30/30A (F)</p> <p>2: must be a numeric value between 1 (inclusive) and 50 (inclusive) (W)</p>
605	grp	op_agcy	A3a	9(3)	<p>1: mandatory except for Art.6 of AP30B(F)</p> <p>2: must be a numeric value between 1 (inclusive) and 999 (inclusive) (W)</p> <p>3: E: value should be present in the reference Table "rf_op_agcy" corresponding to Table 12A/12B in the Preface; if providing a new value, please enter 999 and provide the details as an attachment (F)</p>
606	grp	adm_resp	A3b	X(2)	<p>1: mandatory except for Art.6 of AP30B(F)</p> <p>2: must be a symbol with 1 or 2 characters (F)</p> <p>3: E: symbol should be present in the reference Table "rf_adm_resp" corresponding to Table 12A/12B in the Preface; if providing a new symbol, please enter XX and provide the details as an attachment (F)</p>
607	grp	f_ap30b_art6	A19a	X(1)	<p>1: conditionally required (W)</p> <p>2: must be a non-blank alphanumeric symbol (F)</p> <p>3: E: value must be "Y" if item 5 (prov) = A30B#6.25 (F)</p>

<b>Val. Item No</b>	<b>Table Name</b>	<b>Field Name</b>	<b>Ap4 Ref.</b>	<b>Data Format</b>	<b>Validation Rules</b>
608	grp	plan_catg		X(4)	1: conditionally required for AP30B (W) BR internal validation 2: the symbol must be "E" or null (F) 3: C: if this item is "E", the value in item 609 (plan_status) must be "LIST" (F)
609	grp	plan_status		X(4)	1: mandatory for Art.6 of AP30B (F) BR internal validation 2: the value must be "PLAN" or "LIST" (F)
627	grp	remark		X(30)	1: optional; not to be validated
630	srv_cls	seq_no		9(4)	1: mandatory for AP30/30A (F) 2: must contain a numeric value between 1 (inclusive) and 9999 (inclusive) (W) 3: D: the value must be unique and ascending for all occurrences for this group - BR Internal data (F)
631	srv_cls	stn_cls	C4a	X(2)	1: mandatory (F) 2: the symbol must have 2 characters; the first character must be "E"; the second character can be any letter other than "L", "P", "X" and "Z"; corresponding to Table 3 in the Preface (F) 3: E: value must be EB or EV if submission under AP30 (F) 4: E: value must be EC if submission under AP30A (F) 5: E: value must be ED, EK, ER or ET if submission under Art. 2A of AP30/30A (F) 6: E: value must be EC if submission under AP30B (F)
632	srv_cls	nat_srv	C4b	X(2)	1: mandatory for Art.2A of AP30/30A (F) 2: the symbol must be one of "CO", "CP", "CR", "CV" or "OT"; corresponding to Table 4 in the Preface (F) 3: D: there must be no duplicate class-of-station / nature-of-service pairs (item 631 / 632) for the group (F)
640	grp	polar_type	C6a	X(2)	1: mandatory for Art.2A, 4 or 5 of AP30/30A (F) 2: the symbol must be present in reference table "rf_polar" corresponding to Table 5 of the Preface (F)
641	grp	polar_ang	C6b	9(3).9(2)	1: conditionally required for Art.4, Art.5 and Art.2A of AP30/30A (W) 2: must be a numeric value between 0 (inclusive) and 360 (exclusive) (W) 3: C: if this item is not provided, then item 640 must be not = "L" (F) 4: C: if this item is provided, then item 640 must be = "L" (F)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
642	grp	bdwidth	C3a	9(8)	<p>1: mandatory (F)</p> <p>2: must be a numeric value (W). See Appendix 2a and 2b of the Annex.</p> <p>3: E: For AP30/30A Art.2A between 1-14MHz (W)</p> <p>4: E: For AP30/30A Art. 4, 5 between 1-54000KHz (W)</p> <p>5: E: For AP30B Art.8 between 1-500MHz (W)</p> <p>6: For AP30B Art.6:</p> <p>6.1: E: if item 753 (freq_mhz) = 13000 then value = 500MHz (W)</p> <p>6.2: E: if item 753 (freq_mhz) = 12875 or 13125 or 10825 or 11325 then value = 250MHz (W)</p> <p>6.3: E: if item 753 (freq_mhz) = 6875 or 4650 then value = 300MHz (W)</p>
643	grp	noise_t	C5a	9(6)	<p>1: conditionally required (W)</p> <p>2: must be a numeric value (F)</p> <p>3: C: this item must be provided if item 500 = "R" (F)</p> <p>4: E: For AP30A: value in the range 10 to 6000 K (W). If negative (F)</p> <p>5: E: For AP30B: value in the range 10 to 1000 K in 6GHz band and 10 to 1500 K in 13 GHz band (W). If negative (F)</p> <p>6: E: this item should have the same value for all groups within a same frequency band (AP30A: 14GHz or 17GHz; AP30B: 6GHz or 13GHz) for this receiving beam (W)</p>
644	grp	pwr_max	C8d1	S9(2).9(1)	<p>1: conditionally required for Art.2A of AP30/30A (W)</p> <p>2: must be a numeric value less than or equal to 40 (W)</p> <p>3: C: this item must be provided if item 500 = "E" (F)</p> <p>4: E: if receiving beam - item 500 = "R" - and if item 680 - associated earth station - does not exist then this item must be empty (F)</p>
645	srv_area	ctry	C11a	X(3)	<p>1: conditionally required (W)</p> <p>2: symbol must be present in reference table "rf_ctry_area" corresponding to Table no. 1B in the Preface (F)</p>
646	grp	diag_area	C11a	9(2)	<p>1: conditionally required (W)</p> <p>2: must contain a numeric value between 1 (inclusive) and 99 (inclusive) (F)</p>
647	grp	area_no	C11a	9(2)	<p>1: mandatory (F)</p> <p>2: must be a numeric value between 1 (inclusive) and 99 (inclusive) (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
656	grp	bdwidth_aggr	C8d2	9(6)	<ul style="list-style-type: none"> <li>1: conditionally required for Art.2A of AP30/30A (W)</li> <li>2: must be a numeric value between 1 (inclusive) and 3,000,000 (inclusive) (W)</li> <li>3: C: this item must be provided for a transmitting beam - item 500 = "E" (F)</li> <li>4: C: this item must not be provided for a receiving beam - item 500 = "R" (F)</li> </ul>
659	grp	reg_op_fr	A11a	9(4)	<ul style="list-style-type: none"> <li>1: mandatory for AP30/30A (F)</li> <li>2: must be a numeric value between 0 (inclusive) and 24 (inclusive) (W)</li> </ul>
660	grp	reg_op_to	A11b	9(4)	<ul style="list-style-type: none"> <li>1: mandatory for AP30/30A (F)</li> <li>2: must be a numeric value between 0 (inclusive) and 24 (inclusive) (W)</li> </ul>
663	grp	freq_min	C1	9(6).9(6)	<ul style="list-style-type: none"> <li>1: mandatory for Art.8 of AP30B (F), optional for Art6 of AP30B (W)</li> <li>2: must be a numeric value (F). See Appendix 2b of the Annex</li> <li>3: E: if item 500 (emi_rcp) = "R", value must be 6725 to 7025 MHz (6/4GHz band) or 12750 to 13250 MHz (13/10-11GHz band) (F)</li> <li>4: E: if item 500 (emi_rcp) = "E", value must be 4500 to 4800 MHz (6/4GHz band), 10700 to 10950 MHz or 11200 to 11450 MHz (13/10-11GHz band) (F)</li> </ul>
664	grp	freq_max	C1	9(6).9(6)	<ul style="list-style-type: none"> <li>1: mandatory for Art.8 of AP30B (F), optional for Art6 of AP30B (W)</li> <li>2: must be a numeric value (F). See Appendix 2b of the Annex</li> <li>3: E: if item 500 (emi_rcp) = "R", value must be 6725 to 7025 MHz (6/4GHz band) or 12750 to 13250 MHz (13/10-11GHz band) (F)</li> <li>4: E: if item 500 (emi_rcp) = "E", value must be 4500 to 4800 MHz (6/4GHz band), 10700 to 10950 MHz or 11200 to 11450 MHz (13/10-11GHz band) (F)</li> </ul>
668	emiss	seq_no		9(4)	<ul style="list-style-type: none"> <li>1: mandatory (F)</li> <li>2: must contain a numeric value between 1 (inclusive) and 9999 (inclusive) (F)</li> <li>3: D: the value must be unique and ascending for all occurrences for this group - BR Internal data (F)</li> </ul>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
669	emiss	design_emi	C7a	X(9)	<p>1: mandatory except for Art.6 of AP30B(F)</p> <p>2: E: the symbol must contain 9 alphanumeric characters, which are validated in two parts from left to right - the first four characters (necessary bandwidth) and the next five characters (class of emission) (F)</p> <p>3.1: E: the first character must be numeric, ranging from 1 (inclusive) to 9 (inclusive) or "H" (F)</p> <p>3.2: E: the next three characters can be numeric (0 to 9 inclusive) or "H", "K", "M" or "G"; however, there must be only one alphabetic character ("H", "K", "M", "G") in the set of the first four characters (F)</p> <p>3.3: E: the necessary-bandwidth portion of this item (the first four characters) is converted to a frequency value in kilohertz by using the unit specified by the alphabetic character (H - hertz, K - kilohertz, M - megahertz, G - gigahertz) and its position in the four character sequence as an implied decimal point (for eg. 36M0 is 36.0 megahertz or 36000 kilohertz); this value should be less than or equal to the assigned frequency band - item 642 - (F)</p> <p>4.1: E: 5th character - must be alphabetic but not one of "E", "I", "O", "S", "T", "U", "Y", "Z" plus not "F" for submissions under AP30/30A Reg.1&amp;3 (F)</p> <p>4.2: E: 6th character - must be one of "0", "1", "2", "3", "7", "8", "9", "X" (F)</p> <p>4.3: E: 7th character - must be one of "A", "B", "C", "D", "E", "F", "N", "W", "X" (F)</p> <p>4.4: E: 8th character - must be one of "A", "B", "C", "D", "E", "F", "G", "H", "J", "K", "L", "M", "N", "W", "X" and "-" (W)</p> <p>4.5: E: 9th character - must be one of "N", "C", "F", "T", "W", "X" and "-" (W)</p> <p>5: For Art.6 of AP30B:</p> <p>5.1: E: if item 753 (freq_mhz) = 13000 then value = 500M (W)</p> <p>5.2: E: if item 753 (freq_mhz) = 12875 or 13125 or 10825 or 11325 then value = 250M (W)</p> <p>5.3: E: if item 753 (freq_mhz) = 6875 or 4650 then value = 300M (W)</p>
670	emiss	pep_max	C8b1	S9(2).9(1)	<p>1: mandatory for AP30/30A (F)</p> <p>2: must be a numeric value between -40 (inclusive) and +40 (inclusive) (W)</p>
671	emiss	pwr_ds_max	C8b2	S9(3).9(1)	<p>1: mandatory for AP30/30A or AP30B (F)</p> <p>2: must be a numeric value between -200 (inclusive) and -10 (inclusive) (W)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
672	emiss	pep_min	C8c1	S9(2).9(1)	<p>1: conditionally required for Art.2A of AP30/30A (W)</p> <p>2: must be a numeric value between -40 (inclusive) and +40 (inclusive) (W)</p> <p>3: C: if item is missing, item 677 should be provided (F)</p> <p>4: C: value must be less than or equal to item 670 (F)</p> <p>5: E: if the frequencies for the group - item 753 - are in the band 13.75 - 14 Ghz for FSS - item 631 = "EC" - then this item is mandatory (F)</p>
673	emiss	pwr_ds_min	C8c3	S9(3).9(1)	<p>1: conditionally required for Art.2A of AP30/30A (W)</p> <p>2: must be a numeric value between -200 (inclusive) and -10 (inclusive) (W)</p> <p>3: C: if item is missing, item 678 should be provided (F)</p> <p>4: C: value must be less than or equal to item 671 (F)</p>
674	emiss	c_to_n	C8e1	S9(2).9(1)	<p>1: conditionally required for Art.2A of AP30/30A (W)</p> <p>2: must be a numeric value between -20 (inclusive) and +30 (inclusive) (W)</p> <p>3: C: if item is missing, item 679 should be provided (F)</p>
675	emiss	pwr_ds_nbw	C8h	S9(3).9	<p>1: mandatory for AP30B, Art.4 and 5 of AP30 and AP30A in the band 17.3-18.1 GHz (F)</p> <p>2: For AP30 and AP30A in the band 17.3-18.1 GHz</p> <p>2.1: E must be a numeric value between -80.0 and -20.0 dB(W/Hz) (W)</p> <p>2.2: E for all regions the difference between the submitted power density and the maximum power density (<math>pwr - 10 \times \log(B)</math>, where "pwr" is the total power and "B" is the necessary bandwidth), must be &lt; 0.1 dB (W)</p> <p>3: For AP30B</p> <p>3.1: Up-link (item 500 = R):</p> <p>3.1: E: 6/4GHz band: value in the range -75 to -40 dB(W/Hz) - 13/10-11GHz band: value in the range -65 to -40 dB(W/Hz) (W)</p> <p>3.2: Downlink (item 500 = E):</p> <p>3.2: E: 6/4GHz band: value in the range -90 to -60 dB(W/Hz) - 13/10-11GHz band: value in the range -90 to -40 dB(W/Hz) (W)</p>
677	emiss	attch_pep	C8c2	9(2)	<p>1: conditionally required for Art.2A of AP30/30A (W)</p> <p>2: must be a numeric value between 1(inclusive) and 99 (inclusive) (F)</p> <p>3: C: this item must be provided if item 672 is not provided (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
678	emiss	attch_mpd	C8c4	9(2)	1: conditionally required for Art.2A of AP30/30A (W) 2: must be a numeric value between 1(inclusive) and 99 (inclusive) (F) 3: C: this item must be provided if item 673 is not provided (F)
679	emiss	attch_c2n	C8e2	9(2)	1: conditionally required for Art.2A of AP30/30A (W) 2: must be a numeric value between 1(inclusive) and 99 (inclusive) (F) 3: C: this item must be provided if item 674 is not provided (F)
680	e_as_stn	stn_name	C10b1	X(20)	1: conditionally required (W) 2: must be an alphanumeric symbol (F) 3: E: this item must be provided if submission under AP30A or Art. 2A of AP30/30A and if item 684 = "S" - specific station (F) 4: E: if submission under AP30A or Art. 2A of AP30/30A and if item 684 = "S" - specific station, associated earth stations with the same name working with this beam must have the same values for items 681, 684, 685-692, 693, 694, 695,710 and 696+697+ 698-702 (F)
681	e_as_stn	ctry	C10c2	X(3)	1: conditionally required for AP30/30A and Art.2A of AP30/30A(W) 2: symbol must be present in reference table "rf_ctry" corresponding to Table no. 1B of the preface (F) 3: C: this item must be provided if item 684 = "S" - specific station (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F)
684	e_as_stn	stn_type	C10b2	X(1)	1: mandatory (F) 2: symbol must be "P", "T" or "S" (F)
685	e_as_stn	long_deg	C10c1	9(3)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 180 (inclusive) (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F) 5: E: check value against items 686 to 688; values of 0W 0min 0sec and 180W 0min 0sec are not valid but 0E 0min 0sec and 180E 0min 0sec are valid (W)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
686	e_as_stn	long_ew	C10c1	X(1)	1: conditionally required (W) 2: symbol must be "E" or "W" (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F)
687	e_as_stn	long_min	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 60 (exclusive) (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F)
688	e_as_stn	long_sec	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 60 (exclusive) (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F) 5: E: if item 685 = 180, then items 687 and 688 should be = 0 (F)
689	e_as_stn	lat_deg	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 90 (inclusive) (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F)
690	e_as_stn	lat_ns	C10c1	X(1)	1: conditionally required (W) 2: symbol must be "N" or "S" (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F)
691	e_as_stn	lat_min	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 60 (exclusive) (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
692	e_as_stn	lat_sec	C10c1	9(2)	<p>1: conditionally required (W)</p> <p>2: must be a numeric value between 0 (inclusive) and 60 (exclusive) (F)</p> <p>3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F)</p> <p>4: C: this item must not be provided if item 684 = "T" - typical station (F)</p> <p>5: E: if item 689 = 90, then items 691 and 692 must be equal to 0 (F)</p>
693	e_as_stn	noise_t	C10d6	9(6)	<p>1: conditionally required for AP30B and Art.2A of AP30/30A (W)</p> <p>2: must be a numeric value (W)</p> <p>3: C: this item must be provided if item 500 = "E" (F)</p> <p>4: C: this item must not be provided if item 500 = "R" (F)</p> <p>5: E: receiving system noise temperature in the range 10 to 140 K in 6/4GHz band (W)</p> <p>6: E: receiving system noise temperature in the range 10 to 200 K in 13/10-11GHz band (W)</p> <p>7: E: if value is negative (F)</p>
694	e_as_stn	gain	C10d3	S9(2).9(2)	<p>1: mandatory (F)</p> <p>2: must be a numeric value (W)</p> <p>3: E: value in the range Gmin - Gmax (W) as per Appendix 5 of the Annex</p> <p>4: E: for submission under AP30/30A value should be equal to <math>(G_{ref} + 20 \cdot \log_{10}(D/D_{ref}))</math> (W) as per Appendix 5 of the Annex</p>
695	e_as_stn	bmwidth	C10d4	9(3).9(2)	<p>1: mandatory for AP30/30A and AP30B (F), conditionally required for Art.2A of AP30/30A (W)</p> <p>2: must be a numeric value (F)</p> <p>3: E: for submission under AP30/30A: value in the range <math>(\Theta)_{min} - (\Theta)_{max}</math> (W) and should be equal to <math>((\Theta)_{ref} \cdot D_{ref}/D)</math> (W) as per Appendix 5 of the Annex</p> <p>4: E: for submission under AP30B: value in the range <math>(\Theta)_{min} - (\Theta)_{max}</math> (W) and should be equal to <math>(57.966 \cdot \Pi / 10^{(G/20)})</math> (W) as per Appendix 5 of the Annex</p> <p>5: for submission under Art.2A of AP30/30A:</p> <p>5.1: E: if this item is not provided, then item 708 (pattern_id) must identify antenna types "ND-EARTH" or "ND-SPACE" (values 607, 608, 609 or 610) (F)</p> <p>5.2: E: value must be within the range from the minimum allowable to the maximum allowable calculated as per Appendix 4 of the Annex (W)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
697	e_as_stn	diag_e	C10d5a	9(2)	1: conditionally required (W) 2: must be a numeric value between 1 (inclusive) and 99 (inclusive) (F) 3: C: if this item is provided, then item 708 must not be provided (F)
703	e_as_stn	long_dec	C10c1	S9(3).9(4)	1: conditionally required (W) 2: must be a numeric value between -180 (exclusive) and 180 (inclusive) (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F)
704	e_as_stn	lat_dec	C10c1	S9(2).9(4)	1: conditionally required (W) 2: must be a numeric value between -90 (inclusive) and 90 (inclusive) (F) 3: C: this item must be provided if item 684 = "S" (specific station) or "P" (test-point) (F) 4: C: this item must not be provided if item 684 = "T" - typical station (F)
705	e_srvcls	seq_no		9(4)	1: mandatory for Art.2A of AP30/30A (F) 2: must contain a numeric value between 1 (inclusive) and 9999 (inclusive) (F) 3: D: the value must be unique and ascending for all occurrences for this group - BR Internal data (F)
706	e_srvcls	stn_cls	C10d1	X(2)	1: mandatory for Art.2A of AP30/30A (F) 2: the symbol must be present in the reference table "rf_stn_cls" containing valid symbols for class of station (F) 3: E: each symbol must be valid for the corresponding class of station symbol of the satellite group to which this associated earth station belongs - this correspondence is given in Appendix 1 of the Annex (F) 4: E: for each class-of-station symbol of the satellite group, there must be a corresponding class-of-station symbol for this association earth station belonging to the satellite group, as per the correspondence given in Appendix 1 of the Annex (F)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
707	e_srvcls	nat_srv	C10d2	X(2)	<p>1: mandatory for Art.2A of AP30/30A (F)</p> <p>2: the symbol must be one of "CO", "CP", "CR", "CV" or "OT"; corresponding to Table 4 in the Preface (F)</p> <p>3: E: the class-of-station / nature-of-service pair - items 706, 707 - must not be duplicated for the group (F)</p> <p>4: E: the symbol must be the same as the nature-of-service - item 632 - associated with the corresponding class-of-station - item 631 - of the space group found in rule 706/3 (F)</p>
708	e_as_stn	pattern_id	C10d5a1	9(4)	<p>1: conditionally required (W)</p> <p>2: must be numeric value between 1 (inclusive) and 9999 ( inclusive) (F)</p> <p>3: C: if this item is not provided, then item 697 must be provided (F)</p> <p>4: E: value must exist as a primary key in the antenna pattern reference table rf_ant_type (F)</p>
709	e_as_stn	pattern_id_x	C10d5b	9(4)	<p>1: mandatory for AP30/30A (F)</p> <p>2: must contain a numeric value between 1 (inclusive) and 9999 (inclusive) (W)</p>
710	e_as_stn	ant_diam	C10d7/d8	9(3).9(4)	<p>1: mandatory for AP30/30A (F), conditionally required for Art.2A of AP30/30A (W)</p> <p>2: must be a numeric value (W)</p> <p>3: E: Value in the range Dmin - Dmax (W) and should be equal to Dref (W) as per Appendix 5 of the Annex</p>
711	e_as_stn	ant_alt		S9(5)	<p>1: mandatory for AP30/30A (W)</p> <p>2: must contain a numeric value between 0 (inclusive) and 9000 (inclusive) (W)</p>
750	assgn	seq_no	C2a	9(4)	<p>1: mandatory (F)</p> <p>2: must contain a numeric value between 1 (inclusive) and 9999 (inclusive) (F)</p> <p>3: D: the value must be unique and ascending for all occurrences for this group - BR Internal data (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
751	assgn	freq_sym	C2a1a	X(1)	<p>1: mandatory except for Art.6 of AP30B(F)</p> <p>2: symbol must be "K", "M" or "G" (F)</p> <p>3: check this symbol against frequency value in item 752 (F)</p> <p>3.1: C: if this item is "K", then the value in item 752 should be between 5000 (exclusive) and 27500 (inclusive) (F)</p> <p>3.2: C: if this item is "M", then the value in item 752 should be between 27.5 (exclusive) and 10500 (inclusive) (F)</p> <p>3.3: C: if this item is "G", then the value in item 752 should be between 10.5 (exclusive) and 400 (inclusive) (F)</p>
752	assgn	freq_assgn	C2a1b	9(5).9(5)	<p>1: mandatory except for Art.6 of AP30B (F)</p> <p>2: must be a numeric value between 10.5 (inclusive) and 27500 (inclusive) (F)</p> <p>3: E: there must not be any duplicate frequency / symbol pairs in the list of assigned frequencies for the group (F)</p> <p>4: E: there should be no overlap in the list of assigned frequencies for the group; i.e. for each frequency in the sorted list of assigned frequencies, the lower and upper limits are calculated, using the bandwidth - item 642 - , as (assigned frequency +/- bandwidth/2); the upper limit of each assigned frequency should be less than or equal to the lower limit of the next assigned frequency in the sorted list (W)</p> <p>5: For AP30B:</p> <p>5.1: E: Art.6 : if item 500 (emi_rcp) = "R", value must be 13000 or 12875 or 13125 or 6875 Mhz. If item 500 (emi_rcp) = "E", value must be 10825 or 11325 or 4650 Mhz (W)</p> <p>5.2: E: Art.8: if item 500 (emi_rcp) = "R", value must be in the range 6725 - 7025 MHz or 12.75 - 13.25 GHz. If item 500 (emi_rcp) = "E", value must be in the range 10.70 - 10.95 GHz or 11.20 - 11.45 GHz or 4500 - 4800 MHz (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
753	assgn	freq_mhz		9(6).9(6)	<p>1: mandatory; for BR Internal use (F)</p> <p>2: must be a numeric value between 27.5 (inclusive) and 400000 (inclusive) (F)</p> <p>3: E: the value must be equal to the assigned frequency in megahertz derived from items 751 and 752 according to rule 751/3 (F)</p> <p>4: For AP30B</p> <p>4.1: E: Art.6 : if item 500 (emi_rcp) = "R", value must be 13000 or 12875 or 13125 or 6875 Mhz. If item 500 (emi_rcp) = "E", value must be 10825 or 11325 or 4650 Mhz (F)</p> <p>4.2: E: Art.8: if item 500 (emi_rcp) = "R", value must be in the range 6725 - 7025 MHz or 12.75 - 13.25 GHz. If item 500 (emi_rcp) = "E", value must be in the range 10.70 - 10.95 GHz or 11.20 - 11.45 GHz or 4500 - 4800 MHz (F)</p>
760	mod_char	range_agc	A12	9(3).9(2)	<p>1: mandatory for AP30A (F)</p> <p>2: must be a numeric value between 0.0 (inclusive) and 15.0 (inclusive) (W)</p>
762	mod_char	freq_dev_tv	C9a3a	9(6).9(6)	<p>1: conditionally required for AP30/30A (W)</p> <p>2: must be a numeric value (W)</p> <p>3: C: this item must be provided if item 770 (i_mod_typ) = "frequency modulation" (F)</p>
763	mod_char	i_pre_emph	C9a3b	9(4)	<p>1: conditionally required for AP30/30A (W)</p> <p>2: the symbol must be present in the reference table "rf_charact" (F)</p> <p>3: C: this item must be provided if item 770 (i_mod_typ) = "frequency modulation" (F)</p>
764	mod_char	i_mplx_typ	C9a3c	9(4)	<p>1: mandatory for AP30/30A (F)</p> <p>2: the symbol must be present in the reference table "rf_charact" (F)</p>
765	mod_char	freq_dev_fm	C9a6a	9(6).9(6)	<p>1: conditionally required for AP30/30A (W)</p> <p>2: must be a numeric value between 0 (exclusive) and 4 (inclusive) (W)</p> <p>3: C: this item must be provided if item 770 (i_mod_typ) = "frequency modulation" (F)</p>
766	mod_char	freq_swp	C9a6b	9(6).9(6)	<p>1: conditionally required for AP30/30A (W)</p> <p>2: must be a numeric value between 0 (exclusive) and 200 (inclusive) (W)</p> <p>3: C: this item must be provided if item 770 (i_mod_typ) = "frequency modulation" (F)</p>

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
767	mod_char	i_nrgy_dsp_typ	C9a6c	9(2)	1: conditionally required for AP30/30A (W) 2: the symbol must be present in the reference table "rf_charact" (F) 3: C: this item must be provided if item 770 (i_mod_typ) = "frequency modulation" (F)
768	mod_char	i_nrgy_dsp	C9a7	9(4)	1: conditionally required for AP30/30A (W) 3: C: this item must be provided if item 770 (i_mod_typ) not = "frequency modulation" (F)
769	mod_char	i_tv_sys	C9a9	9(4)	1: conditionally required for AP30/30A (W) 2: the symbol must be present in the reference table "rf_charact" (F) 3: C: this item must be provided if item 770 (i_mod_typ) not = "frequency modulation" (F)
770	mod_char	i_mod_typ	C9a1	9(4)	1: mandatory for AP30/30A (F) 2: the symbol must be present in the reference table "rf_charact" (F)
771	mod_char	i_baseband	C9b2	9(4)	1: conditionally required for AP30/30A (W) 2: the symbol must be present in the reference table "rf_charact" (F) 3: C: this item must be provided if item 770 (i_mod_typ) = "frequency modulation" (F)
772	mod_char	i_sound_bc	C9b1	9(4)	1: conditionally required for AP30/30A (W) 2: the symbol must be present in the reference table "rf_charact" (F) 3: C: this item must be provided if 770 (i_mod_typ) = "frequency modulation" (F)
781	pl_strap	freq_dn	D1a	9(6).9(5)	1: mandatory for AP30B and AP30/30A for notices having both downlink and uplink beams (F) 2: must be a numeric value greater or equal to 0 (F) 3: E: downlink frequency must be either a valid assigned frequency (item 752) for the transmitting grp specified in item 783, or 0 if submission under AP30B and item 783 = 0 (F)
782	pl_strap	freq_up	D1a	9(6).9(5)	1: mandatory for AP30B and AP30/30A for notices having both downlink and uplink beams (F) 2: must be a numeric value greater or equal to 0 (F) 3: E: uplink frequency must be either a valid assigned frequency (item 752) for the receiving grp specified in item 784, or 0 if submission under AP30B and item 784 = 0 (F)

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
783	pl_strap	grp_id_dn	D1a	9(9)	1: mandatory for AP30B and AP30/30A for notices having both downlink and uplink beams (F) 2: must be a numeric value greater or equal to 0 (F) 3: E: except for submission under AP30B where the value can be 0, this item must be a valid transmitting grp; this is checked by verifying that this grp_id is found in table grp where emi_rcp is = "E" (F)
784	pl_strap	grp_id_up	D1a	9(9)	1: mandatory for AP30B and AP30/30A for notices having both downlink and uplink beams (F) 2: must be a numeric value greater or equal to 0 (F) 3: E: except for submission under AP30B where the value can be 0, this item must be a valid receiving grp; this is checked by verifying that this grp_id is found in table grp where emi_rcp is = "R" (F)
790	ntc_lnk	lnk_ntc_id	A13	9(9)	1: conditionally required (W) 2: must be a numeric value greater than 0 (F) 3: E: For AP30/30A, this item must be a numeric value greater than 0 if (notice.prov is "4.1.12", "4.2.16", "4.2.24", "5.1.2", "5.1.6", "5.1.2/5.1.6" or "RS548") OR (notice.plan_id is "00DN" or "00UP" and ntc_memo.adm_remark = "Part A replacement") (F) 4: E: For AP30B, this item must be a numeric value greater than 0 if notice.prov is "6.54", "8.1", "A30B#6.1M", "A30B#6.1C", "A30B#6.17", "A30B#6.25", "A30B#6.30", "A30B#8.1" (F)
9999	all	all		none	1: the action-code at a level above (notice, beam or grp) is "A" and no rows are provided in the specified table (F)

## Plan Validation Rules for submission notices under AP30B Art. 7

Val. Item No	Table Name	Field Name	Ap4 Ref.	Data Format	Validation Rules
1	notice	ntc_id		9(9)	1: mandatory - BR internal validation (F) 2: must be numeric value between 76500000 and 399999999 (W)
2	notice	ntc_type		X(1)	1: mandatory (F) 2: symbol must be "G" (F)
5	notice	prov		X(12)	1: mandatory (F) 2: the symbol must be one of "7.2","A30B#7.2"- if none of these, then validation is stopped (F)
7	notice	adm	A1f1	X(3)	1: mandatory (F) 2: the symbol must be present in the reference table "rf_adm" containing valid symbols for administrations; this corresponds to table 1A in the Preface (F)
11	notice	d_rcv		9(8)	1: mandatory - BR internal validation (F) 2: must be a valid date, later than 1 January 1979 (inclusive) and prior to date of validation-run (exclusive) (F)
14	notice	st_cur		X(1)	1: mandatory - BR internal validation (F) 2: symbol must be present in the Status Code Reference Table "rf_status" (F)
608	grp	plan_categ		X(4)	1: conditionally required for AP30B (W) BR internal validation 2: the symbol must be "E" or null (F) 3: C: if this item is "E", the value in item 609 (plan_status) must be "LIST" (F)
609	grp	plan_status		X(4)	1: mandatory for Art.6 of AP30B (F) BR internal validation 2: the value must be "PLAN" or "LIST" (F)
685	e_as_stn	long_deg	C10c1	9(3)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 180 (inclusive) (F)
686	e_as_stn	long_ew	C10c1	X(1)	1: conditionally required (W) 2: symbol must be "E" or "W" (F)
687	e_as_stn	long_min	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 60 (exclusive) (F)
688	e_as_stn	long_sec	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 60 (exclusive) (F)

<b>Val. Item No</b>	<b>Table Name</b>	<b>Field Name</b>	<b>Ap4 Ref.</b>	<b>Data Format</b>	<b>Validation Rules</b>
689	e_as_stn	lat_deg	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 90 (inclusive) (F)
690	e_as_stn	lat_ns	C10c1	X(1)	1: conditionally required (W) 2: symbol must be "N" or "S" (F)
691	e_as_stn	lat_min	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 60 (exclusive) (F)
692	e_as_stn	lat_sec	C10c1	9(2)	1: conditionally required (W) 2: must be a numeric value between 0 (inclusive) and 60 (exclusive) (F)
703	e_as_stn	long_dec	C10c1	S9(3).9(4)	1: conditionally required (W) 2: must be a numeric value between -180 (exclusive) and 180 (inclusive) (F)
704	e_as_stn	lat_dec	C10c1	S9(2).9(4)	1: conditionally required (W) 2: must be a numeric value between -90 (inclusive) and 90 (inclusive) (F)

## Appendix 1: Correspondence between Earth Station Class of Station and Space Station Class of Station

Earth Station Class of Station	Corresponding Space Station Class of Station
TC	EC
TD	ED
TK	EK
TR	ER
UB	EB
UD	ED
UK	EK
UR	ER
UV	EV

## Appendix 2a: Frequency bands limitation in AP30/30A

Based on the Regional Plan (field "plan\_id"), the E/R flag (item B.2) and the Service Area (SA) location (item C.11.b), as follows.

The highest/lowest frequency plus/minus half the highest assigned frequency band (item C.3.a) should be within the following ranges (F):

- ↓: 11.7 – 12.5 GHz for AP30 Region 1 ("plan\_id"=00DN and SA in Region 1) with channel number 1 to 40
- ↑: 17.3 – 18.1 GHz for AP30A 17GHz Region 1 or 3 ("plan\_id"=00UP) with channel number 1 to 40
- ↓: 12.2 – 12.7 GHz for AP30 Region 2 ("plan\_id"=30\_2 and E/R flag=E) with channel number 1 to 32
- ↑: 17.3 – 17.8 GHz for AP30A Region 2 ("plan\_id"=30\_2 and E/R flag=R) with channel number 1 to 32
- ↓: 11.7 – 12.2 GHz for AP30 Region 3 ("plan\_id"=00DN and SA in Region 3) with channel number 1 to 24
- ↑: 14.5-14.8 GHz for countries outside Europe in AP30A ("plan\_id"=00UP and SA not in Europe) [W] with channel number 1 to 14

## Appendix 2b: Frequency bands limitation in AP30B

Bandwidth	grp.freq_min (MHz)	grp.freq_max (MHz)	assgn.freq_mhz (MHz)	Necessary bdwdth (MHz)
Uplink 13 GHz Full-Band	12750	13250	13000	500
Uplink 13 GHz Lower-Band	12750	13000	12875	250
Uplink 13 GHz Upper-Band	13000	13250	13125	250
<b>Downlink 10-11 GHz Full-Band</b>	<b>10700</b>	<b>11450</b>	<b>10825</b> <b>11325</b>	<b>250</b>
Downlink 10 GHz Lower-Band	10700	10950	10825	250
Downlink 11 GHz Upper-Band	11200	11450	11325	250
Uplink 6 GHz	6725	7025	6875	300
Downlink 4 GHz	4500	4800	4650	300

## Appendix 3: Calculation of the two test beamwidths

Calculate the two test beamwidths using the maximum isotropic gain (item 504) as follows: beamwidth  $\theta_1 = 65.0 / (D/\lambda)$  where  $D/\lambda = 10^{\{(G_{\max} - 7.7)/20.0\}}$  and  $G_{\max}$  is the maximum isotropic gain in dB and beamwidth  $\theta_2 = \sqrt{(27000/g_{\max})}$  where  $g_{\max} = 10.0^{(G_{\max} / 10.0)}$ .

## Appendix 4: Calculation of minimum and maximum beamwidths

Calculate the two test beamwidths ( $\theta_1, \theta_2$ ) as indicated in Appendix 3. The minimum allowable beamwidth  $\theta_{\min} = (0.9) (\min \theta_1, \theta_2)$ ; if  $\theta_{\min}$  is greater than 360, it is set to 360. The maximum allowable beamwidth  $\theta_{\max} = (1.1) (\max \theta_1, \theta_2)$ . If  $\theta_{\max}$  is greater than 360, it is set to 360.

**Appendix 5: reference values for earth stations antenna diameter, beamwidth and gain as a function of Appendices 30, 30A and 30B, and standard reference pattern**

RR	Earth station Emission/ Reception	Region	Fig.	Frequency band	Validity	APL reference pattern	Mspace ref Of Standard reference pattern	D <sub>ref</sub>	D <sub>min</sub>	D <sub>max</sub>	θ <sub>ref</sub>	θ <sub>min</sub>	θ <sub>max</sub>	G <sub>ref</sub>	G <sub>min</sub>	G <sub>max</sub>
AP30	R	R123				---	---	---	0.30	20.00	---	0.00	999.99	---	20.00	70.00
AP30	R	R13	7	---	<1997	APERR_006V01	R13RES	0.9	0.30	20.00	2.00	0.10	5.00	38.43	20.00	70.00
AP30	R	R13	7bis	---	>1995	APERR_007V01	MODRES	0.6	0.30	20.00	2.86	0.00	999.99	35.50	20.00	70.00
AP30	R	R2	8	---	---	APERR_008V01	R2RES	1.0	0.30	20.00	1.70	0.00	999.99	40.24	20.00	70.00
AP30A	E					---	---	---	0.30	20.00	---	0.00	999.99	---	43.00	70.00
AP30A	E	R13	A	14GHz	<1997	APERR_009V01	R13TES	6.0	0.30	20.00	---	0.25	0.25	57.00	43.00	70.00
AP30A	E	R13	A	17GHz	<1997	APERR_009V01	R13TES	5.0	0.30	20.00	---	0.25	0.25	57.00	43.00	70.00
AP30A	E	R13	A	14GHz	>1995	APERR_010V01	MODTES	6.0	0.30	20.00	---	0.25	0.25	57.00	43.00	70.00
AP30A	E	R13	A	17GHz	>1995	APERR_010V01	MODTES	5.0	0.30	20.00	---	0.25	0.25	57.00	43.00	70.00
AP30A	E	R2	6	G≥59dBi	---	APERR_011V01	R2TES	5.0	2.50	20.00	---	0.00	0.20	---	59.00	70.00
AP30A	E	R2	6	G<59dBi	---	APERR_011V01	R2TES	5.0	2.50	20.00	0.24	0.00	999.99	57.40	43.00	59.00
AP30B	R	R123				---	---				---	0.00	999.99	---	20.00	70.00
AP30B	R	R123	T1	4GHz	>WRC07	APEREC015V01		5.5			---	0.00	999.99	47.00	20.00	70.00
AP30B	R	R123	T1	10-11GHz	>WRC07	APEREC015V01		2.7			---	0.00	999.99	48.40	20.00	70.00
AP30B	E	R123				---	---				---	0.00	999.99	---	20.00	70.00
AP30B	E	R123	T1	6GHz	>WRC07	APEREC015V01		5.5			---	0.00	999.99	50.40	20.00	70.00
AP30B	E	R123	T1	13GHz	>WRC07	APEREC015V01		2.7			---	0.00	999.99	49.80	20.00	70.00
A30-30A#A2a	E/R	R123							1.20	40.00	---	0.00	999.99	---	24.00	65.00

Where D is antenna diameter (e\_as\_stn.ant\_diam), θ (Theta) is beamwidth (e\_as\_stn.bmwdth) and G is gain (e\_as\_stn.gain).

## Appendix 6 : Cross validation with GIMS mdb format of Geostationary satellite network

GIMS Diagram headers should match the corresponding SNS values for the following items:

- ntc\_id
- sat\_name
- long\_nom
- adm
- ntf\_rsn

The key of the diagram is based on the following fields:

- diagram type
- beam\_name
- emi\_rcp
- polarization
- area\_no

<b>diagram type (*)</b>	<b>beam name</b>	<b>emi_rcp</b>	<b>polarization</b>	<b>area_no</b>	<b>remark</b>
CO	s_beam.beam_name	s_beam.emi_rcp	X	N/A	If AP30/30A Art.4 and 5 and non-elliptical beam
CO	s_beam.beam_name	s_beam.emi_rcp	C	N/A	
GSO	s_beam.beam_name	s_beam.emi_rcp	C	N/A	If AP30A Art4,5, Art.2A, non elliptical beam and bi-directional frequency band
SA	s_beam.beam_name	s_beam.emi_rcp	C	grp.area_no	

(\*)

CO: B.3.b - antenna gain contour diagrams

GSO: B.3.e - antenna gain towards geostationary satellite orbit diagrams

SA: C.11.a - service area diagrams