ITUEvents

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Advance Publication Information (API) for satellite networks not subject to coordination

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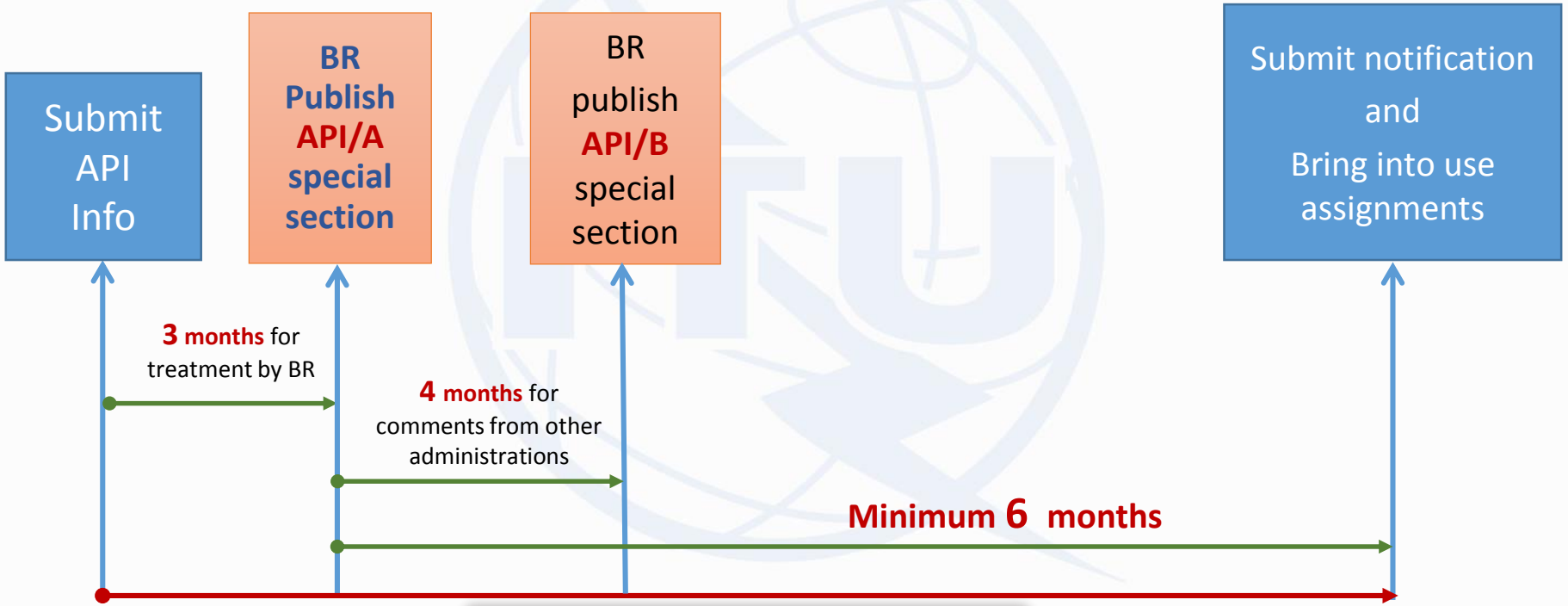
Regulatory procedure for satellite networks **not subject to coordination**



MAXIMUM 7 YEARS !

In total, ≈ 9 MONTHS to 7 YEARS !

Advance Publication Information (API)

- **API** is a mandatory procedure (**No.9.1**)
  for all satellite network **not subject to coordination procedure**
- Mainly concerns Non-GSO networks
  Also for geostationary satellite networks with inter-satellite link operating with other Non-GSO space stations in bands not subject to coordination

➢ For such systems **not subject to coordination**, the provisions of **Article 9, Sub-Section IA** (API on satellite networks that are not subject to coordination procedure under Section II), are applicable.

➢ Although not subject to coordination, there is a **commenting procedure** and **resolutions** of difficulties specified **under No.9.3**

➢ Small satellites **usually** make use of frequency bands that are **not subject to** coordination

Regulatory procedures for comments and resolution of difficulties

Commenting procedures

- Comments to an API/A should be submitted to the notifying Administration and the SpaceCom comment file submitted to the Bureau within **4 months** from the date of publication of the API/A special section
- The Bureau publishes the list of administrations which have sent comments in an **API/B** special section in a BR IFIC

Regulatory procedures for comments and resolution of difficulties

Cooperation and Resolution of Difficulties

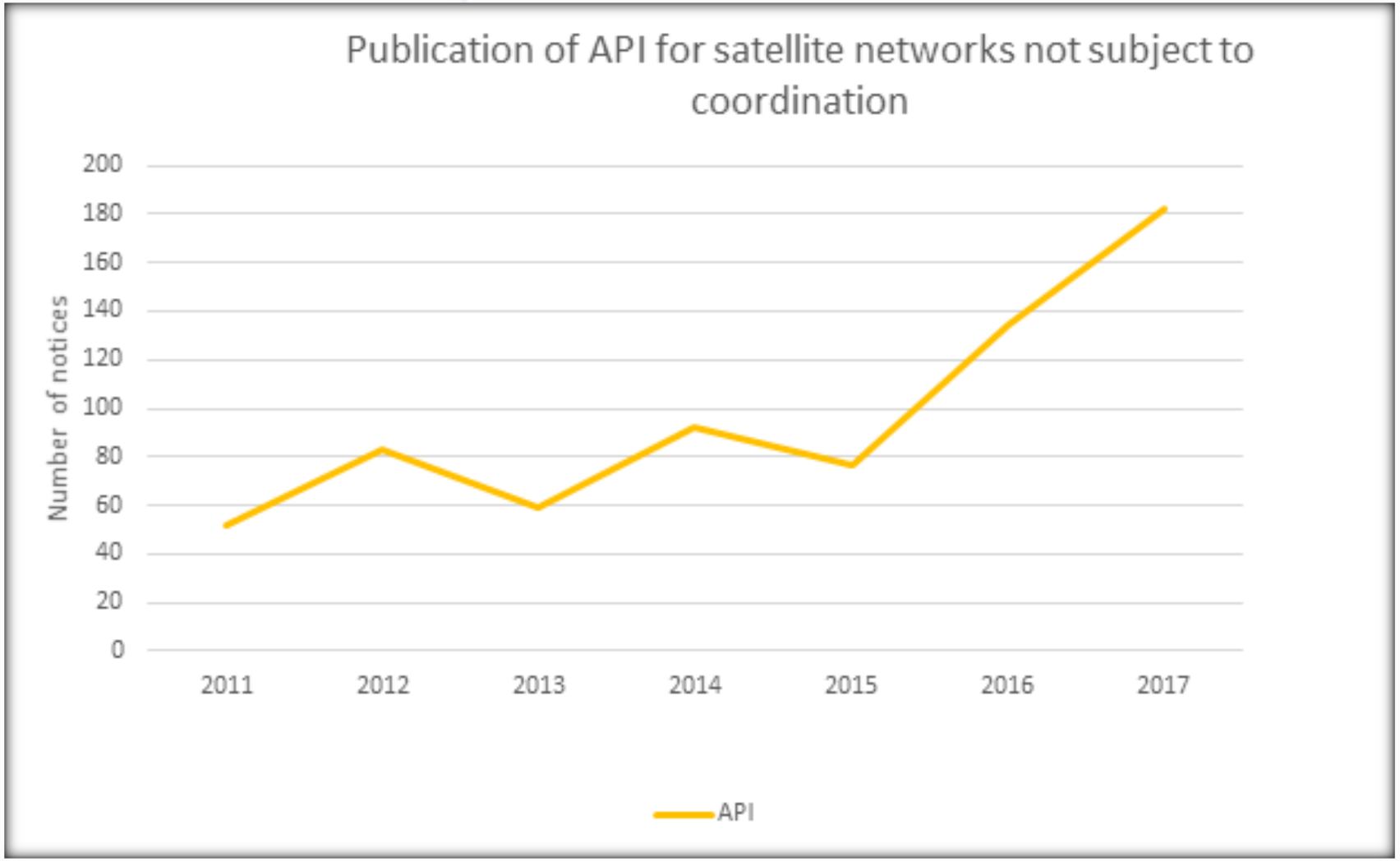
- Both administrations shall endeavor to cooperate in joint efforts to resolve any difficulties and shall exchange any additional relevant information that may be available
- Either party can request for the assistance of the Radiocommunication Bureau (No.**9.3**)
- **In case of difficulties**, the administration responsible for the planned satellite network shall explore all possible means to resolve the difficulties without considering the possibility of adjustment to networks of other administrations
- **If no such means can be found**, it may request the other administrations to explore all possible means to meet its requirements
- The administrations concerned shall make every possible effort to resolve the difficulties by means of mutually acceptable adjustments to their networks

No. 9.4 states that reports on the progress made in resolving any difficulties should be submitted to the Bureau

- However, since the Bureau does not require this information in the examination of the notification for recording, it is not necessary to provide this information except if the notifying administration wishes to keep the Bureau informed about the progress of its project.

ITU Publication of API

not subject to coordination



Information required for filing (1)

- **Specified in Appendix 4 of the Radio Regulations, including:**
  - Satellite name, responsible administration and operating agency
  - Orbital characteristics
  - Antenna beam characteristics
  - Frequency band
  - Service Areas
  - designation of emissions
  - Power levels, C/N etc.
  - Characteristics of Earth stations
  - etc. …
- **All submissions should be in BR software SpaceCap compatible format (Resolution-55)**

Appendix 4 – example (1)

Items in Appendix	*C - CHARACTERISTICS TO BE PROVIDED FOR EACH GROUP OF FREQUENCY ASSIGNMENTS FOR A SATELLITE ANTENNA BEAM OR AN EARTH STATION OR RADIO ASTRONOMY ANTENNA*
C.1	**FREQUENCY RANGE**
C.1.a	the lower limit of the frequency range within which the carriers and the bandwidth of the emission will be located for each Earth-to-space or space-to-Earth service area, or for each space-to-space relay
C.1.b	the upper limit of the frequency range within which the carriers and the bandwidth of the emission will be located for each Earth-to-space or space-to-Earth service area, or for each space-to-space relay
C.2	**ASSIGNED FREQUENCY (FREQUENCIES)**
C.2.a.1	the assigned frequency (frequencies), as defined in No. **1.148** – in kHz up to 28 000 kHz inclusive – in MHz above 28 000 kHz to 10 500 MHz inclusive – in GHz above 10 500 MHz If the basic characteristics are identical, with the exception of the assigned frequency, a list of frequency assignments may be provided In the case of advance publication, required only for active sensors In the case of geostationary and non geo-stationary satellite networks, required for all space applications except passive sensors In the case of Appendix **30B**, required only for notification under Article 8
C.2.a.2	the channel number
C.2.b	the centre of the frequency band observed – in kHz up to 28 000 kHz inclusive – in MHz above 28 000 kHz to 10 500 MHz inclusive – in GHz above 10 500 MHz

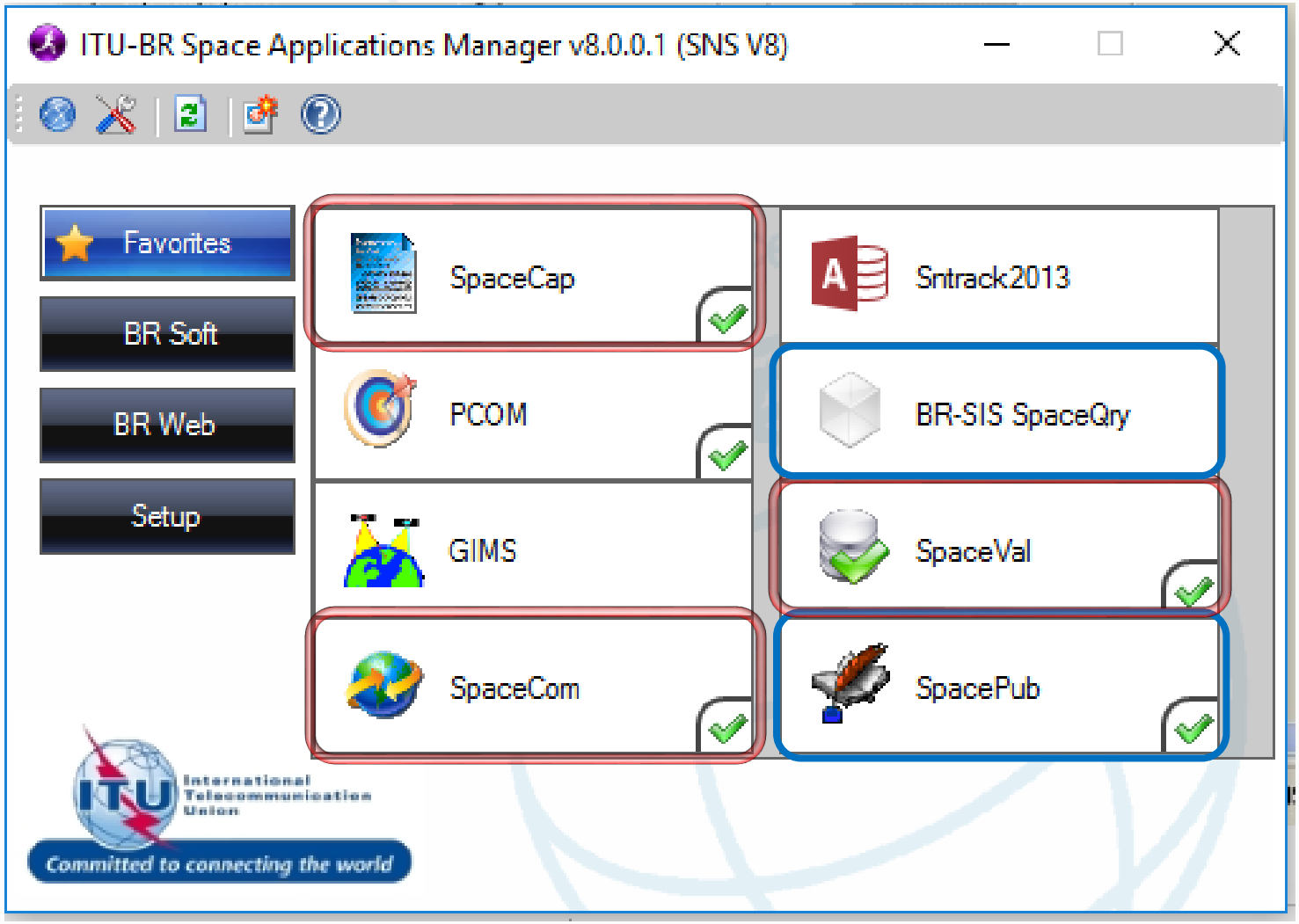
Appendix 4 – example (2)

Advance publication of a geostationary-satellite network	Advance publication of a non-geostationary-satellite network subject to coordination under Section II of Article 9	Advance publication of a non-geostationary-satellite network not subject to coordination under Section II of Article 9	Notification or coordination of a geostationary-satellite network (including space operation functions under Article 2A of Appendices 30 or 30A)	Notification or coordination of a non-geostationary-satellite network	Notification or coordination of an earth station (including notification under Appendices 30A or 30B)	Notice for a satellite network in the broadcasting-satellite service under Appendix 30 (Articles 4 and 5)	Notice for a satellite network (feeder-link) under Appendix 30A (Articles 4 and 5)	Notice for a satellite network in the fixed-satellite service under Appendix 30B (Articles 6 and 8)	Items in Appendix	Radio astronomy
									C.1	
X	X	X						X	C.1.a	
X	X	X						X	C.1.b	
									C.2	
		+	+	+	X	X	X	+	C.2.a.1	
						X	X		C.2.a.2	
		+	+	+					C.2.b	X

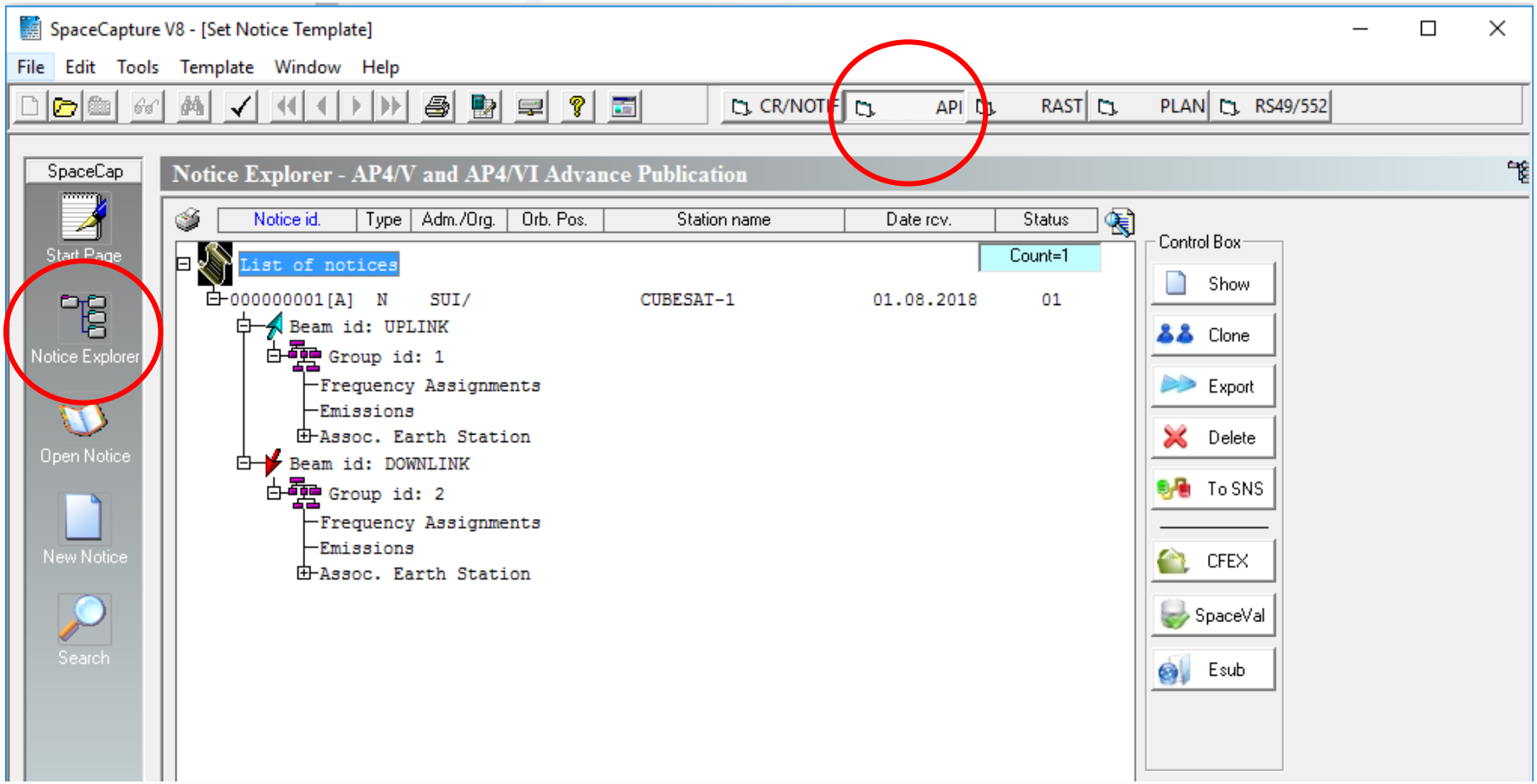
How to capture? --- BRsoft

- **The latest version of BR software** for capture and validation (**SpaceCap and SpaceVal**) of space notices are available from the ITU website (**http://www.itu.int/ITU-R/go/space-software**)
- Also available in each **BR IFIC DVD**
- **Administrator privilege** is required to install these software.
- Add **descriptions** in PDF or Word format to supplement the information where necessary

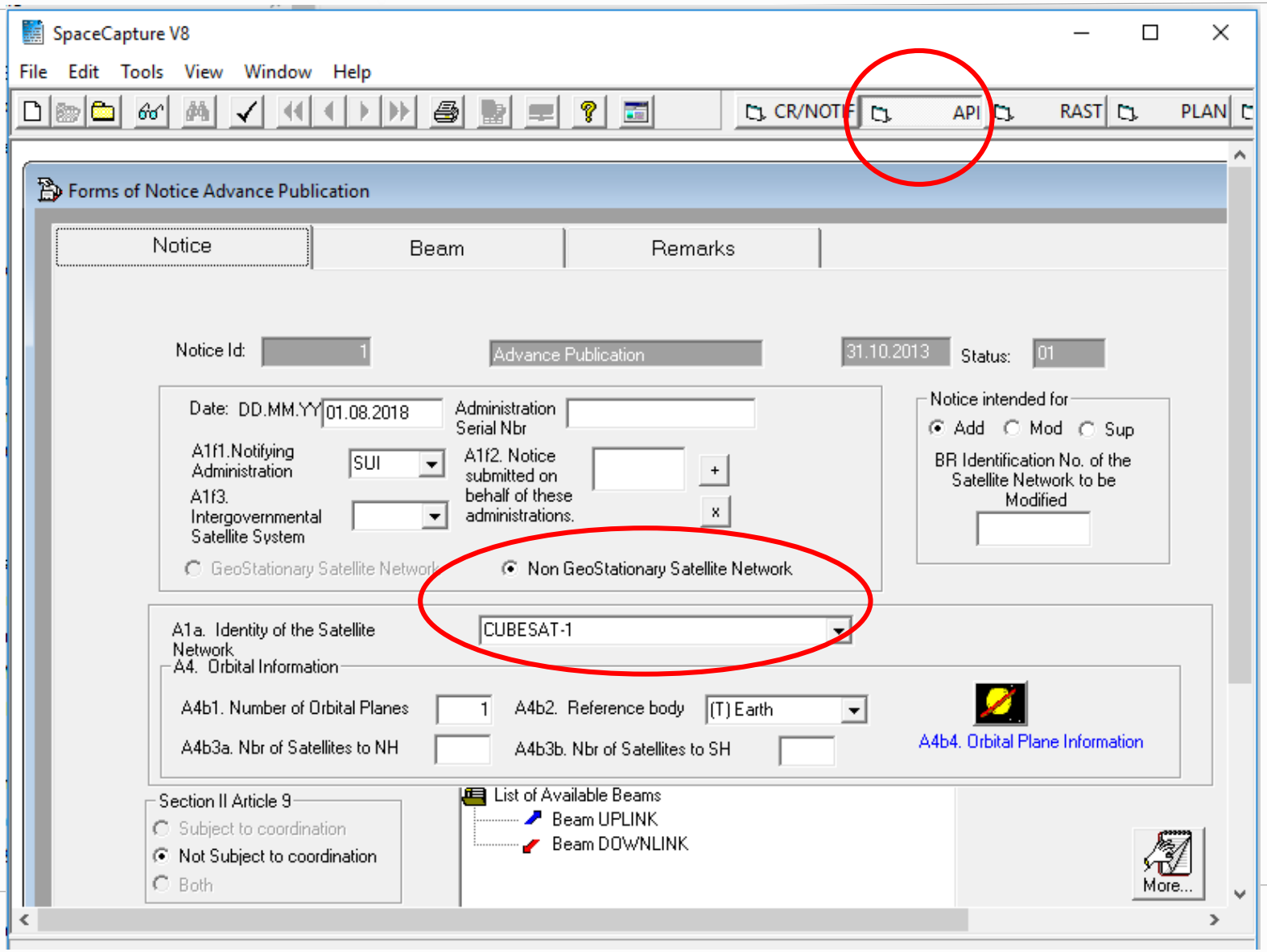
How to capture? --- BRsoft



SpaceCap for API



SpaceCap for API



Antenna radiation patterns

Submit antenna radiation patterns for space station beams and associated Earth stations in one of the following way:

1. **Indicate the antenna pattern IDs by selecting from the Antenna Pattern Library available at the webpage: https://www.itu.int/en/ITU-R/software/Pages/ant-pattern.aspx**
2. **Provide as a table of Gain vs off-axis angles**
3. **Describe them with equations**
4. **Provide diagrams graphical format in JPEG or PDF files**

In all cases, ensure that

- **the gain value is clearly shown for all values of off-axis angles from 0° to 180°**
- **the gain value is consistent with the maximum gain indicated in the mdb file**
- **other guidelines are indicated in the webpage for APL indicated above**

Examples of Antenna radiation patterns

Eg. Earth Station Antenna Patterns

AP7	APERR_012V01	Appendix 7 Earth station antenna pattern for the determination of the coordination area around an earth station in frequency bands between 100 MHz and 105 GHz.	Receiving	32
			Transmitting	75
Non-directional	APEND_099V01	Non-directional earth station antenna pattern.	Receiving	607
			Transmitting	608

Eg. Space Station Antenna Patterns

Non-directional	APSND_499V01	Non-directional space station antenna pattern.	Receiving	610
			Transmitting	609

Before you submit….

- Run **Spaceval** to ensure that there are **no fatal errors**
- If there are fatal errors, try to correct them before submission
- If you are unable to resolve all fatal errors, you can **describe** them in the cover letter of your submission, the Bureau will provide assistance to address the errors
  - It is necessary to explain this when submitting any notice with fatal errors using the e-Submissions system
- Make sure that all required antenna patterns are provided
- Do not forget to add **notes/attachments** when necessary
- *Satellite filings **must be submitted by the Administration***

e-Submission system online

Effective: 01.08.2018

- **Upload the electronic notice via the Bureau's new online submission system "e-submission of satellite network filings" (https://www.itu.int/itu-r/go/space-submission) in accordance with the revised Rules of Procedure on Receivability**

- Notices submitted using "e-Submission of satellite network filings" for space services shall be recorded as received on the actual date of receipt, irrespective of whether or not that is a working day at the ITU/BR's offices in Geneva
- Notices submitted using "e-Submission of satellite network filings" for space services do not require any separate confirmation by telefax or mail.

(see BR circular letter **CR/434** dated **1 August 2018** for more details)

Processing of the API by BR

- **Information received by BR is distributed "as-received" on the website: https://www.itu.int/ITU-R/space/asreceived/Publication/AsReceived available to all public**
- **BR will examine the notice for completeness and correctness**
- **If the frequency band/service is subject to coordination under section II of Article 9, BR will inform the administration to submit it separately as a request for coordination**
- **If further clarification is required, BR will send a telefax to the notifying administration requesting for that clarifications**
  - Response should be received by BR within 30 days from the date of BR's telefax for it to be taken into account, and for the original date of receipt to be maintained
- **Generally, BR will publish the notice officially in an API/A special section in a BR IFIC within 3 months from the official date of receipt**

Modification of characteristics

- According to **No.9.2**, amendments to the information for NGSO filing that requires a new API are:
  - **Additional frequency band**
  - **Modification of the direction of transmission**
  - **Modification of reference body**
- However, it is a good practice to submit a modification to the API any change in characteristics including orbital characteristics, service area (adding earth stations) etc.
- This will allow other administrations/operators the chance to submit comments before the modifications are notified for recording in the Master Register.
- If during the notification, there are other changes in characteristics from the information published in API/A, other administrations can submit comments following the **Part I-S** (**No.11.28.1**).

Cost recovery

- Cost recovery framework is defined in the Council Decision 482
- Filings for amateur-satellite service is exempt from cost recovery fee
- All other services are subject to cost recovery fee
- For satellite networks not subject to coordination
  - API – flat fee of 570 CHF
  - Notification – flat fee of 7030 CHF
- Modification charged with flat fee just like a new filing
- Notification of Earth stations are not chargeable
- Each Administration has one free filing per year, corresponding to the year of receipt of the filing, and has to be nominated to BR before the due date of the invoice
- In the event of non-payment by the due date, the filing will be cancelled (RR9.2B.1 and A.11.6). However the invoice continue to be payable for the Administration

  Note also ROP relating to late payment
- http://www.itu.int/ITU-R/go/space-cost-recovery/en

API/A

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
BUREAU DES RADIOCOMMUNICATIONS

INTERNATIONAL TELECOMMUNICATION UNION
RADIOCOMMUNICATION BUREAU

UNIÓN INTERNACIONAL DE TELECOMUNICACIONES
OFICINA DE RADIOCOMUNICACIONES

RÉSEAU À SATELLITE SATELLITE NETWORK RED DE SATÉLITE	ZACUBE-2	SECTION SPÉCIALE Nº SPECIAL SECTION No. SECCIÓN ESPECIAL N.º	API/A/12068
		BR IFIC / DATE BR IFIC / DATE BR IFIC / FECHA	2864 / 20.02.2018
ADM. RESPONSABLE RESPONSIBLE ADM. ADM. RESPONSABLE	AFS	LONGITUDE NOMINALE NOMINAL LONGITUDE LONGITUD NOMINAL	NGSO
		NUMÉRO D'IDENTIFICATION IDENTIFICATION NUMBER NÚMERO DE IDENTIFICACIÓN	117545401
RENSEIGNEMENTS REÇUS PAR LE BUREAU LE / INFORMATION RECEIVED BY THE BUREAU ON / INFORMACIÓN RECIBIDA POR LA OFICINA EL			15.12.2017

Ces renseignements reçus par le Bureau des radiocommunications, en application du numéro 9.1/9.2 du Règlement des radiocommunications, sont publiés conformément au numéro 9.2B.

This information, received by the Radiocommunication Bureau pursuant to No.9.1/9.2 of the Radio Regulations, is published in accordance with No. 9.2B.

Esta información, recibida por la Oficina de Radiocomunicaciones con arreglo al número 9.1/9.2 del Reglamento de Radiocomunicaciones, se publica de acuerdo con lo dispuesto en el número 9.2B.

Une administration qui estime que des brouillages inacceptables risquent d'être causés à ses réseaux ou à ses systèmes à satellites existants ou en projet communique à l'administration qui a demandé la publication des renseignements ses observations, avec copie au Bureau des radiocommunications, dans le délai indiqué ci-après.

Any administration which believes that unacceptable interference may be caused to its existing or planned satellite networks or systems shall communicate its comments to the publishing administration, with a copy to the Radiocommunication Bureau, by the deadline indicated below.

Cualquier administración que estime que se podría causar interferencia perjudicial a sus redes o sistemas de satélites existentes o planificados deberá comunicar sus comentarios a la administración que publica, con copia a la Oficina de Radiocomunicaciones, en el plazo que se indica más abajo.

DATE LIMITE POUR LA RÉCEPTION DES COMMENTAIRES EXPIRY DATE FOR THE RECEIPT OF COMMENTS FECHA LÍMITE PARA LA RECEPTIÓN DE LOS COMENTARIOS	20.06.2018

Contains the characteristics of a
a satellite network for advance publication.

API/B

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
BUREAU DES RADIOCOMMUNICATIONS

INTERNATIONAL TELECOMMUNICATION UNION
RADIOCOMMUNICATION BUREAU

UNIÓN INTERNACIONAL DE TELECOMUNICACIONES
OFICINA DE RADIOCOMUNICACIONES

RÉSEAU À SATELLITE SATELLITE NETWORK RED DE SATÉLITE	PRISMA-I1	SECTION SPÉCIALE Nº SPECIAL SECTION No. SECCIÓN ESPECIAL N.º	API/B/827
		BR IFIC / DATE BR IFIC / DATE BR IFIC / FECHA	2864 / 20.02.2018
ADM. RESPONSABLE RESPONSIBLE ADM. ADM. RESPONSABLE	I	LONGITUDE NOMINALE NOMINAL LONGITUDE LONGITUD NOMINAL	NGSO
		NUMÉRO D'IDENTIFICATION IDENTIFICATION NUMBER NÚMERO DE IDENTIFICACIÓN	117545350 / 117545350

RÉFÉRENCE DE LA SECTION SPÉCIALE (BR IFIC / DATE) SPECIAL SECTION REFERENCE (BR IFIC / DATE) REFERENCIA DE LA SECCIÓN ESPECIAL (BR IFIC / FECHA)	API/A/12034 (BR IFIC 2854 / 19.09.2017)

1. La présente Section spéciale est publiée conformément au numéro 9.5 du Règlement des radiocommunications, et concerne la demande de coordination publiée dans la section spéciale API/A indiquée ci-dessus. 2. Les administrations qui ont soumis des observations au titre du numéro 9.3 dans le délai de quatre mois suivant la date de publication de la Section spéciale API/A précitée, sont indiquées ci-dessous et le tableau contient un résumé de ces observations.	1. This Special Section is published in accordance with No. 9.5 of the Radio Regulations, in respect of the request for coordination published in the API/A Special Section referenced above. 2. Administrations that have submitted comments under No. 9.3 within four months of the date of publication of the mentioned API/A Special Section are listed below and the table contains a summary of the comments.	1. Esta Sección Especial se publica de conformidad con lo dispuesto en el número 9.5 del Reglamento de Radiocomunicaciones, en lo que respecta a la solicitud de coordinación publicada en la Sección Especial API/A antes citada. 2. Las administraciones que han presentado comentarios conforme al número 9.3 dentro de un plazo de cuatro meses a partir de la fecha de publicación de la Sección Especial API/A mencionada, se indican a continuación y en el cuadro se presenta un resumen de los comentarios.

ALG, AUS, BHR, BLR, CAN, CHN, CYP, D, E, EGY, F, HOL, J, KAZ, KOR, MLA, MRC, PAK, QAT, RUS, USA

Contains a list of administrations which have sent comments within 4 months.

Free online ITU-R help & documents

- **Small Satellite Support**
  - http://www.itu.int/en/ITU-R/space/Pages/supportsmallsat.aspx
- **BR space website**
  - http://www.itu.int/en/ITU-R/space)
- **SNL online** ***(basic reference info concerning space stations)***
  - http://www.itu.int/ITU-R/space/snl
- **SNS online – detailed information concerning satellite networks**
  - *TIES account required, need to be an ITU member (member state, ITU-R sector member, associate or academia)*
  - http://www.itu.int/sns/

Free online ITU-R Publications

https://www.itu.int/en/publications/ITU-R/Pages/default.aspx

- **Handbook for amateur and amateur-satellite services**

https://www.itu.int/en/publications/ITU-R/pages/publications.aspx?parent=R-HDB-52-2014&media=electronic

- **Handbook for earth exploration satellite service**

https://www.itu.int/en/publications/ITU-R/pages/publications.aspx?parent=R-HDB-56-2011&media=electronic

- **Handbook for meteorological-satellite service**

https://www.itu.int/en/publications/ITU-R/Pages/publications.aspx?lang=en&media=electronic&parent=R-HDB-45-2017

- **Handbook for space research service**

https://www.itu.int/en/publications/ITU-R/pages/publications.aspx?parent=R-HDB-43-2013&media=electronic

Free online ITU-R documents & events

- **ITU Radio Regulations @ 2016**
  http://www.itu.int/pub/R-REG-RR/
- **ITU RoP** http://www.itu.int/pub/R-REG-ROP/en
- **ITU-R Recommendations**
  http://www.itu.int/publ/R-REC/
- **ITU-R Reports** https://www.itu.int/pub/R-REP/
- **WRC-19**
  https://www.itu.int/en/ITU-R/conferences/wrc/2019/
- **CPM19-2**
  https://www.itu.int/en/ITU-R/study-groups/rcpm/Pages/cpm-19.aspx#

Questions ?