

## Brief Description of SPACEVAL Space Validation software

The Validation software must be used to validate electronic submissions relating to space & earth stations' frequency assignments. Details on the usage and applicability of this software are provided in BR Circular-letter 284 dated 16 May 2008.

SpaceVal version 6.0 is the latest version of the SpaceVal software released in June 2008. It is to be used to validate electronic filings submitted under Appendix 4 to the Radio Regulations amended by WRC-2007. It carries out all the validation checks that were implemented in the previously existing Space validation software – SpaceVal V5. All previously existing validation rules are implemented here, in addition to new rules. These rules are provided in the corresponding Validation Rules documents (presently available only in English), along with an explanation. The validation rules are of three types :

1. **Basic** – mandatory / conditional / optional requirement and valid values for a data item; rule numbers 1 and 2; all data items have these checks;
2. **Cross-check** – presence or value of a data item being dependent on another data item, which could be in the same table or elsewhere in the notice structure;
3. **Complex** – these are validation rules involving many data items, possibly with calculations to be performed using them.

The Space validation software is integrated with the BR's Data Capture software – SpaceCap version 6.0 and above – to provide data capture users with an **on-line validation** capability. During on-line validation, only the data items that are on the currently displayed screen are validated with respect to the basic rules. Some cross-check rules are also executed on-line if the data items involved are on the same currently displayed screen. The objective of on-line validation is to eliminate typing and simple errors of a repetitive nature, which could be duplicated via the cloning (copy-and-paste) facility of SpaceCap.

After a filing has been validated using SpaceVal, the user can view the result of the validation (error messages and warnings) by launching the “**Validation Report Viewer**” which has been implemented in the BR's SpaceQry software (version 6.0 and above). This can be done by clicking on the “View Report” button on the SpaceVal user interface dialog, which is enabled after validation is complete. Options are provided on the SpaceQry dialog to select only Fatal errors or all errors and the user can print the Validation Error Report at a local printer.

**PLEASE NOTE that following the completion of capture of the filing, the SpaceVal software must be executed on the filing, in order to apply all validation rules.**

### ***What's new in version 6.1.12 (March 2012)***

Plan Submissions:

- Revision of validation rules for table e\_srvcls, mod\_char and grp.diag\_area
- Validation of the number of decimals entered for numeric fields according to the Preface.
- Validation of strapping for Region 2

### ***What's new in version 6.1.8 (December 2010)***

Correction of validation rule 706 (e\_srvcls, stn\_cls). Class of Station code "UV" is now valid.

### ***What's new in version 6.1.7 (November 2010)***

Non-Plan Submissions:

- Revision of validation rules:
  - o Items 631, 730, 735, 736 for API subject to coordination
  - o Items 751 rule 3.3. Maximum permitted frequency has now increased to 3000 GHz.

### ***What's new in version 6.1.5 (April 2010)***

Plan Submissions:

- Revision of validation rules 4.1, 4.2 of item 533 and 5.1, 5.2 of item 534 (for AP30B, major and minor axis less than 1.60 in 6/4GHz band, and less than 0.80 in 13/10-11GHz band are acceptable)

### ***What's new in version 6.1.4 (March 2010)***

Non-Plan Submissions:

- Revision of some validation rules.
- Improved the accuracy of checking of assignments for the need of No.9.11A procedure by checking also the class of stations and direction of transmission, in addition to the frequency range.

Plan Submissions:

- Revision of rules of items 533, 534 (s\_beam.maj\_axis, s\_beam.min\_axis) and 694, 695, 710 (e\_as\_stn.gain, e\_as\_stn.bmwidth, e\_as\_stn.ant\_diam).

### ***What's new in version 6.1.3 (September 2009)***

- Revision of validation rules of item 101 (geo.long\_nom) for Plan Submissions (related to EIRP check in Annex 7 to Appendix 30)

### ***What's new in version 6.1.2 (July 2009)***

- Implementation of rules related to the validation of submissions under AP30B (WRC07).

### ***What's new in version 6.1 (February 2009)***

- Decimal separator is no longer limited to a dot (.). The Validation checks the decimal separator with the Regional Settings in the Control Panel.
- Possibility of starting the Batch Validation from SpaceCap.
- Revision of validation rules for Non-Plan submissions (See the *Validation rules for Satellites* document for items 9, 260, 695)

### ***What's new in version 6.0.11 (November 2008)***

- Revision of validation rules for Plan submissions (See the *Validation rules for Plans* document for items 531 and 532)
- Revision of validation rules for Non-Plan submissions (See the *Validation rules for Satellites* document for items 551, 552 and 752)

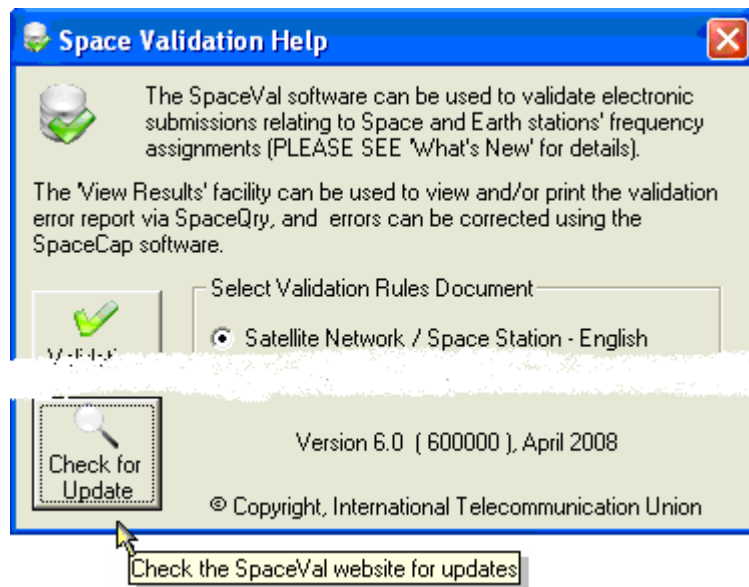
### ***What's new in version 6.0.10 (September 2008)***

- Implementation of Extended validation rules for Plan submissions (See the *Space Plans Validation rules* document for items 101, 675 and 752)

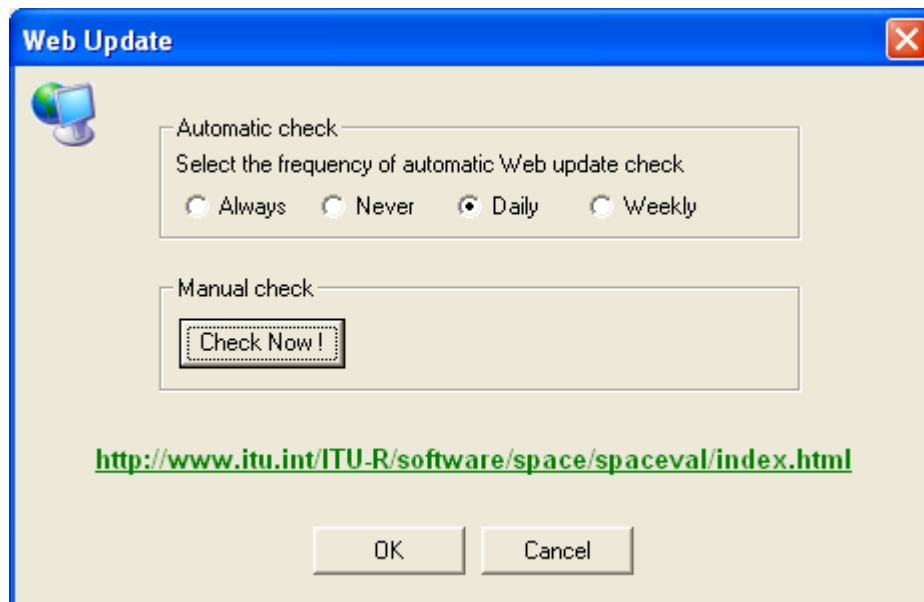
### ***What's new in version 6.0 (June 2008)***

- Revision of validation rules according to changes made to Appendix 4 at WRC-07.
- Addition of Extended validation rules for Plan submissions (See the *Space Plans Validation rules* document).
- Web update settings:  
The Web Update form allows you to manage the frequency of Web Update Checks.  
To load this form, click on the *Check for Update* button located at the bottom of the SpaceVal Help window, as shown here:

## What's New in SpaceVal V6.1.12



The Web Update can be done either Manually or Automatically (Always, Never, Daily or Weekly)



## What's new in version 5.3 (February 2008)

### Inclusion of Validation for Plan submissions

This SpaceVal 5.3 version allows for the validation of submissions under Articles 2A, 4 and 5 of Appendices **30** and **30A** and Articles 6, 7 and 8 of Appendix **30B**.

To validate Plan notices click the *use plan rules* checkbox at the top of the interface:

## What's New in SpaceVal V6.1.12

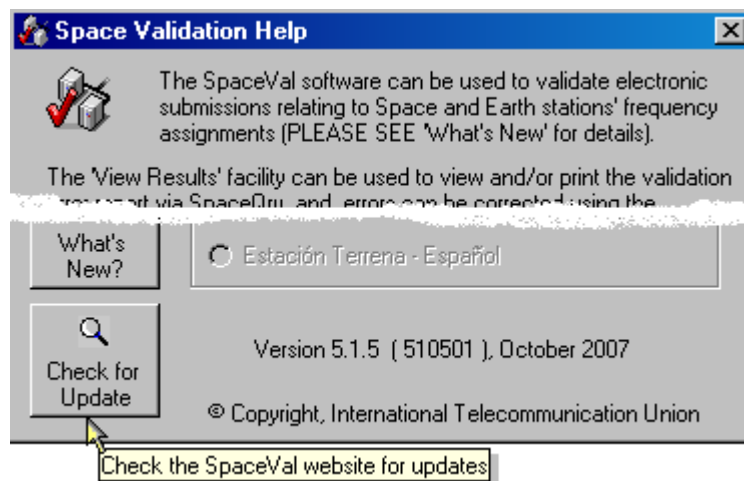


See the *Space Plans Validation rules* document which you can launch from the SpaceVal Help window.

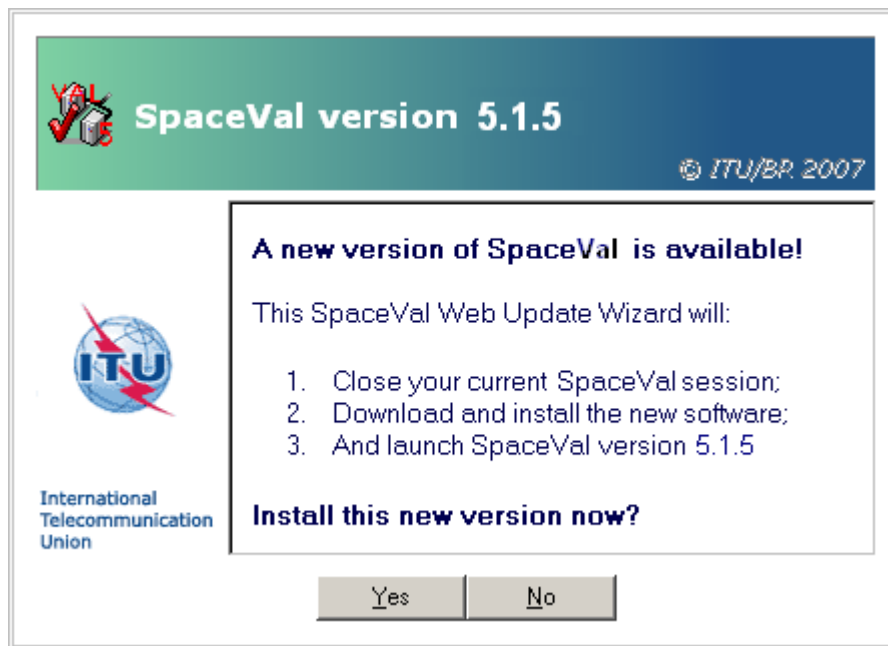
## What's new in version 5.1.5 (11 October 2007)

### Inclusion of the Space Validation Web Update Wizard

The SpaceVal Web Update Wizard is a utility which will automatically check the SpaceVal website for updates to its software. If an update is available, you are notified and given an option to download and install the new version of the software. To run this utility, click on the *Check for Update* button located at the bottom of the SpaceVal Help window, as shown here:



Once the Web Update Wizard is launched, if an update is available, you will see the following window which requests whether or not you wish to download and perform the update:



**The following corrections were made to the Space Validation processing:**

Each occurrence of the pattern\_id field is now validated against the *rf\_ant\_type* table located in the Space Reference Database and *not* against the values of the *ant\_type* table located in the validated database container.

**What's new in version 5.1.4 (24 September 2007)**

General enhancement to include Advanced Publication (API) notice validation.

The following additions were made to the Space validation rules:

1. **Item 1** (notification ID field) **rule 6.3:** E: 4th to 5th digits have to be "54" if item 5 (provision) is "9.1/IA" or "9.1/IB" or "9.1/IA,IB" - BR internal validation (W)
2. **Item 17** (f\_mod\_type) : if item = 'A', then validation is not performed.
3. **Item 603** (date in use) **rule 5.1:**E: if item 13 (notification reason) = "A", this date must not be later than the date of receipt (item11) plus seven years (F)
4. **Item 603** (date in use) **rule 5.2:** E: if item 13 (notification reason) = "A", this date must not be earlier than the date of receipt (item11) (W)
5. **Item 631** (class of station) **rule 6:** E: if value = "ES" and associated space station is non-GSO, the coordination-not-required form is requested (W)
6. **Item 730** (associated satellite name) **rule 5:** E: if present, then item 735 - station type - must be "G" for API's of geostationary satellites not requiring coordination (F)

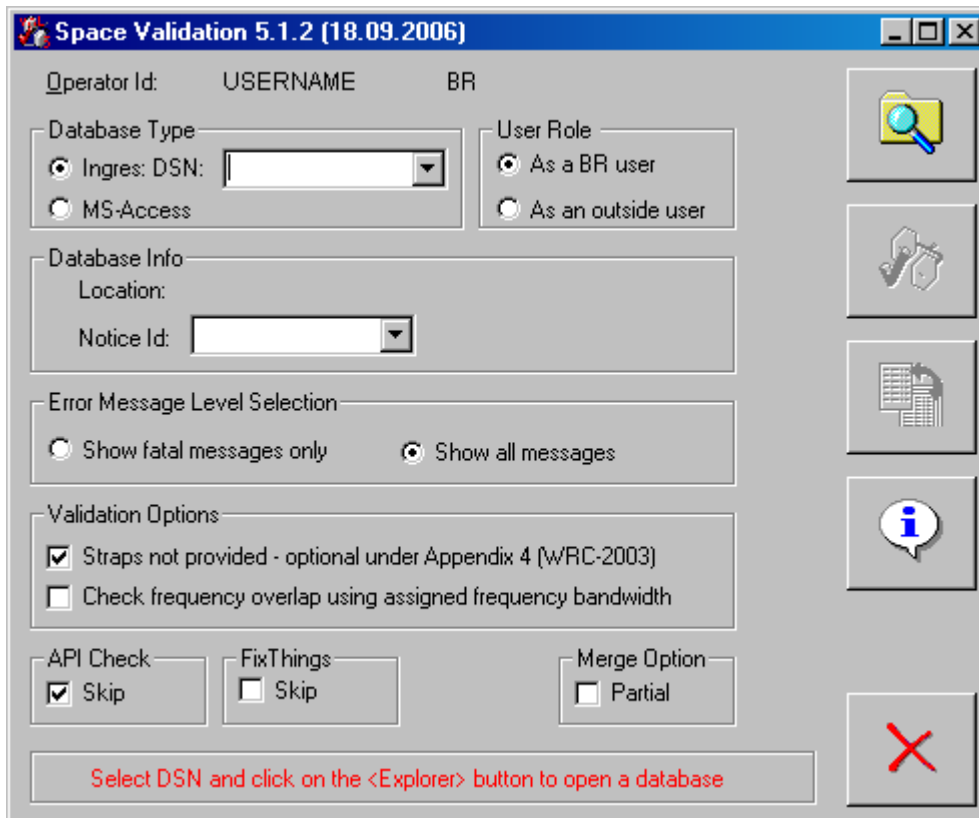
***What's new in version 5.1.3 (30 November 2006)***

The following corrections were made to the Space validation rules:

1. Item 9 (notification occurs field) rules were changed so that a value is no longer necessary for notices which are not submitted under provisions RR1488, S11.2, and 11.2.

***What's new in version 5.1.2 (28 September 2006)***

In an attempt to make the SpaceVal software a little more user-friendly, the user interface has been changed. The following illustration shows the initial SpaceVal window after launching the application in the BR environment.



**Select/Open Button.** This button allows the user to select and open a notification database (MS-Access ) for validation; or, in the case of BR users validating notices in the SNS database, this button connects to and opens the Ingres database specified by the choice of DSN.



**Validate Button.** Once the database has been selected, the notice ID chosen, and any validation options selected, this button will launch the validation process.



**View Results Button.** After the validation process is finished, clicking on this button will launch the SpaceQry software and automatically invoke the *Validation Report* query for the notice being validated.



**Help/Info Button.** This button invokes the Help dialogue which allows the user to select and view a number of documents including the *Validation Rules* documents.

## What's new in version 5.0.5 (24 May 2005)

All the modifications in this version relate to the implementation of the “vis-à-vis” check of the Request for Coordination (CR) or Notification (N) filing against its Advance Publication of Information (API) filing that has been previously processed in the SNS Ingres database. These are internal BR validation checks and refer to the following validation rules :

## What's New in SpaceVal V6.1.12

1. Rule 4 of item 100 (geostationary satellite name).
2. Rule 4 of item 200 (non-geostationary satellite name).
3. Rules 4, 5, 6 and 7 of item 753 (Mhz assigned frequency of the group).
4. Rule 3 of items 1014, 1015 and 1016 has been modified to allow the values to be absent if it is a specific station working with a non-geostationary satellite.

## ***What's new in version 5.0.4 (24 March 2005)***

The following corrections were made to the validation software :

1. The checking of the frequency bands for Rule 3 of items 648 (attch\_reg) and 710 (ant\_diam) were modified to use the whole of the frequency band (+/- half-the-bandwidth) and not just the center frequencies.
2. Item 710 was added to Rule 5 of item 680.
3. For internal BR use only, the checks for item 1, rules 3 through 6.2 were implemented.

## ***What's new in version 5.0.3 (26 January 2005)***

The following corrections were made to the validation software :

1. Modified to not require coordination data for a non-geostationary satellite NOT under RR 9.11A.
2. For non-geostationary satellites, added check for API special section information.
3. Rule 3 of item 506 was modified to be compared against items 509 and 514.
4. For non-geostationary satellites and geostationary satellites working with ISS, rule 4 for item 514 was added and rule 3 for item 514 was aligned with this new rule.
5. Rule 6 for item 631 was removed, as the relevant Rule of Procedure (23.13) was suppressed.
6. The list of valid symbols for items 621 and 1621 was corrected, to be aligned with the Preface.
7. Rule 3 for items 709 and 1045 (pattern\_id) was added.
8. Rule 3 for items 1015 and 1016 was adapted for Radio-astronomy stations and renumbered as rule 4.
9. Rule 6 for item 1036 (for radio-astronomy stations) was modified to check only for antenna pattern name or attachment.
10. Item 1642 (bandwidth) was made applicable for all types of earth station.
11. Corrections were made to not require nature-of-service, emission, special-section and coordination data for radio-astronomy stations.

## What's New in SpaceVal V6.1.12

12. The error message severity for rule 5 of item 1643 was corrected to 'W' – in line with the rule.
12. The identification of non-geostationary stations in the FSS subject to 22.5C, 22.5D and 22.5F was being incorrectly done in certain cases. This was corrected.
14. A software modification was made to prevent the error message for Rule 4 of item 736 from being incorrectly generated in certain cases.
15. The bands 47.5 – 47.9 GHz, 48.2 – 48.54 GHz, 49.44 – 50.2 GHz and 81 – 84 GHz were added to the list of frequency bands with bi-directional utilization. The band 74 – 75.5 GHz was removed from the list (attribution modified by WRC-2000).
16. The bands 1164 – 1215, 1215 – 1300 and 1559 – 1610 MHz were added to the list of frequency bands applicable to provisions 9.11A – 9.15.

## ***What's new in version 5.0.2 (8 October 2004)*** **(Correction made 27<sup>th</sup> October 2004 regarding item 12 below)**

The following corrections were made to the validation software :

1. Implementation of rule 0 for item 204 was aligned to match the description of the validation rule; i.e. this item is required for all non-geo satellites.
2. The comparison of notified frequency bands (assigned frequency +/- (half-bandwidth)) against the tables of bi-directional and 9.11A frequency bands (appendices 4 and 9 of the rules) was modified to not include cases where the match was only on the band-edge (eg. now, a notified frequency band 2535 – 2655 MHz will not match with the bi-directional band 2655 – 2690 MHz).
3. Validation rules for item 1021 (f\_pfd\_se in table e\_stn) have been implemented.
4. Implementation of rule 622.3 corrected to correspond to description of the validation rule.
5. A correction was made to prevent an incorrect error message was being produced for item 1036 rule 4.
6. Band 1675 – 1710 MHz was removed from the list of frequency bands with bi-directional utilization (subsequent to WRC-03) and band 1670 – 1675 MHz (WRC-03) was added.
7. Band 17.3 – 17.7 GHz (WRC-03) added to the list of frequency bands with bi-directional utilization.
8. The validation of item 1014 rule 4 was modified to give an error message if the data item is provided for an earth station working with a non-geostationary satellite.
9. Item 656 rule 4 was modified to check only with respect to a receiving beam.
10. Item 1644 (C.8.g.1) is no longer validated as it is of type **C** in Appendix 4. The consequent check in item 1670 (rule 5), which compares item 1670 with this item is removed.
11. Modified text for item 150 rule 1 and item 160 rule 1 to indicate that these data items (referring to strap and noise-gamma data) are optional under Appendix 4 (WRC-2003). Also modified text on the SpaceVal user interface to indicate this.

## What's New in SpaceVal V6.1.12

12. Validation rule 4 of item 710 was modified to be executed only if rule 3 for item 710 was satisfied. A correction was made relating to proper output of the error message for Rule 3 of this item on 27<sup>th</sup> October 2004.
13. Items 244 and 249 were made optional.
14. Implementation of validation rule 6 of item 511 was corrected to match the description of the rule.
15. List of valid antenna radiation patterns was updated as follows :
  - Item 506: REC-1528 added
  - Item 696: REC-1295, AP8 & AP30B added
  - Item 1036: REC-1295, AP8 & AP30B added
16. For internal BR use : SpaceVal now works with the Ingres databases.

## ***What's new in version 5.011 (3 July 2004)***

The following corrections were made to the validation software :

1. The antenna pattern "AP7" was inadvertently missing from the list of valid antenna patterns for item 696 (**ant\_type** of **e\_as\_stn** table). It has been added.
2. The error message for rule 3 of item 230 was making an incorrect reference to item 220. This has been corrected to refer to item 204.
3. The severity of the message for rule 3.1 of item 681 has been changed from F to W.
  4. The severity of the message for rule 3.2 of item 681 has been changed from W to F.

## ***What's new in version 5.01 (28 May 2004)***

The following corrections were made to the validation software :

1. An error message for rule 3 of item 707 (duplicate class-of-station / nature-of-service symbol) was being incorrectly generated due to non-sequential numbering of the rows in the **e\_srvcls** table. This has been corrected.
2. The check for frequency bands applicable for provisions 9.11A – 9.15 (at the beam and group levels) was being applied to all satellite networks; this is now applied only to non-geostationary satellite networks.
3. The existing rule 4 for item 163 has been modified as follows and the software has been updated accordingly:

"The range of numbers represented by items 162 and 163 must be included in the set of numbers for item 150".