

Scope

This document describes the format and the structure of the standard catalog record which contains all the useful information about a given SPOT scene. This record will be used for exchange of catalog information within the SPOT group as well as to the SPOT customers, regardless of the medium used.

This specification is consistent with the capacity of the DALI system. It is used as a format specification for the "products from catalog". The SPOT 4 specificities have also been taken into account, so that the SPOT 4 transition should be as smooth as possible.

This new revision 1.2 takes into account SPOT5 specificities and code station evolution.

Applicable documents

- [1] SPOT Users Handbook
- [2] International Standard ISO 6709 : Standard representation of latitude, longitude and altitude for geographic point locations - First edition, 1983-05-15.

Catalog Record Description

Catalog Record Structure

fld#	Byte#	fld. length	Parameter name
1	1 to 21	21	Scene ID
2	22 to 22	1	Blank
3	23 to 30	8	Latitude Scene Center
4	31 to 39	9	Longitude Scene Center
5	40 to 40	1	/
6	41 to 48	8	Latitude Upper Left Corner
7	49 to 57	9	Longitude Upper Left Corner
8	58 to 58	1	/
9	59 to 66	8	Latitude Upper Right Corner
10	67 to 75	9	Longitude Upper Right Corner
11	76 to 76	1	/
12	77 to 84	8	Latitude Lower Left Corner
13	85 to 93	9	Longitude Lower Left Corner
14	94 to 94	1	/
15	95 to 102	8	Latitude Lower Right Corner
16	103 to 111	9	Longitude Lower Right Corner
17	112 to 112	1	/
18	113 to 117	5	Scene Orientation
19	118 to 118	1	Blank
20	119 to 123	5	Incidence Angle
21	124 to 124	1	Blank
22	125 to 129	5	Sun Azimuth
23	130 to 130	1	Blank
24	131 to 135	5	Sun Elevation
25	136 to 136	1	Blank
26	137 to 137	1	Number of Cloud Cover quotes
27	138 to 138	1	Blank
28	139 to 146	8	Cloud Cover quotes
29	147 to 147	1	Blank
30	148 to 148	1	Max. of Cloud Cover quotes
31	149 to 149	1	Blank
32	150 to 150	1	Average of Cloud Cover quotes
33	151 to 151	1	Blank
34	152 to 152	1	Number of Snow Cover quotes
35	153 to 153	1	Blank
36	154 to 161	8	Snow Cover quotes
37	162 to 162	1	Blank
38	163 to 163	1	Number of Scene Quality quotes
39	164 to 164	1	Blank
40	165 to 168	4	Scene Quality quotes
41	169 to 169	1	Blank
42	170 to 170	1	Aver. of Scene Quality quotes
43	171 to 171	1	Blank
44	172 to 175	4	Gains

45	176 to 176	1	Blank
46	177 to 177	1	Technological imaging flag
47	178 to 178	1	Blank
48	179 to 180	2	Mirror Step
49	181 to 181	1	Blank
50	182 to 182	1	Stereo Pair Status
51	183 to 183	1	Blank
52	184 to 184	1	Imaging Configuration
53	185 to 185	1	Blank
54	186 to 186	1	Quick Look Type
55	187 to 187	1	Blank
56	188 to 190	3	Revolution Number
57	191 to 191	1	Blank
58	192 to 192	1	Minimum Shift Allowed
59	193 to 193	1	Blank
60	194 to 194	1	Maximum Shift Allowed
61	195 to 195	1	Blank
62	196 to 205	10	Segment ID
63	206 to 206	1	Blank
64	207 to 207	1	Deletion / Modification Status
65	208 to 208	1	Blank
66	209 to 209	1	Shift along the track value
67	210 to 215	6	Reserved. Must be set to blanks
68	216 to 217	2	Archiving station
69	218 to 218	1	CR (Carriage Return)
70	219 to 219	1	LF (Line Feed)

Total 219

**Catalog Field
Descriptions**

(1) The field names are listed in order of appearance, giving the record number where they appear in the file, their format and their description. The presentation of numeric data and the number of decimals are illustrated in the examples given by the values between brackets. These values also give the maximum and minimum values the parameters can take.

(2) The ASCII blank characters are noted with a 'b'.
In the following, the conventions used to describe the rule for field encoding are those of ANSI X 3.9 - 1978 Standard for Programming Language FORTRAN.

SCENE ID : Field #1 / I1,2I3.3,6I2.2,I1,A1

The scene identifier for this record, coded as follows:

- SPOT satellite number [1 to 9]

- GRS ID : KKK [001 to 738]
JJJ [009 to 691]

- date of scene center YYMMDD

YY : the last two digits of the year [86 to 99, then 00, 01, 02, etc]

MM : the month number [01 to 12]

DD : the day number within the month [01 to 31]

- GMT time of scene center HHMMSS

HH : the hour [00 to 23]

MM : the minutes within the hour [00 to 59]

SS : the seconds within the minute [00 to 59]

- instrument number [1 or 2]

- Spectral Mode [P or M or X or I or A or B or S or J]

GEOGRAPHIC COORDINATES : Fields #3, 4, 6, 7, 9, 10, 12, 13, 15, 16

The geographic coordinates for the center point of the scene as well as the ones for the four corners of the scene will follow the same format: longitude and latitude are expressed in signed decimal degrees and are encoded according to the convention defined in Applicable Document [2].

LONGITUDE /F9.4

Positive sign towards the East, negative sign towards the West

[-180.0000 to +179.9999]

LATITUDE /F8.4

Positive sign towards the North, negative sign towards the South

[-90.0000 to +90.0000]

SCENE ORIENTATION : Field #18 /F5.1

Orientation angle of the scene: for conventions, see Applicable Document [1], page A-07-4.

[0.0 to 360.0]

INCIDENCE ANGLE : Field #20 /F5.1
Angle of incidence: for conventions, see Applicable Document [1], page A-07-4.
[-90.0 to +90.0]

SUN AZIMUTH : Field #22 /F5.1
Azimuth of the sun direction (positive eastward from north) expressed in degrees.
[0.0 to 360.0]

SUN ELEVATION : Field #24 /F5.1
Sun elevation expressed in degrees (negative elevation may happen for certain winter scenes in polar zones).
[-90.0 to +90.0]

NUMBER OF CLOUD COVER QUOTES : Field #26 /I1
The number of cloud cover quotes for this scene. This number may take the values:
4 if the quotation is performed by quadrant,
8 if the quotation is performed by 1/8 of scene.
[4 or 8]

CLOUD COVER QUOTES : Field #28 /4A1, 4X or 8A1
Cloud cover value of the scene expressed:
- either for each quadrant in the following order: upper left , upper right, lower left, lower right (4 values followed by 4 blanks),
- or for each 1/8 of scene, in the following order: upper left row, upper right row, 2nd left row, 2nd right row, 3rd left row, 3rd right row, lower left row, lower right row (8 values).
Two possible conventions:
- [0] <10%, [1] 10-25%, [2] >25%
- [A] no cloud, [B] 0-10%, [C] 10-25%, [D] 25-75 %, [E] >75%
Irrespective of the convention, the value [*] may be assigned to a quadrant or a 1/8 of scene. This value indicates that there was not enough image lines in the block for quotation. This may occur for the first "incomplete" scene or the last "yncomplete" scene of a segment.

MAX. OF CLOUD COVER QUOTES : Field #30 /A1
The maximum value of the 4 or 8 quotes of field #28.
[0 to 2] or [A to E] or [*]. The value [*] denotes that all the 4 or 8 cloud cover quotes are equal to [*]

AVERAGE OF CLOUD COVER QUOTES : Field #32 /A1
The average of the 4 or 8 quotes of field #28, rounded to the closest integer. When the alphabetic convention is used, the letters are converted to integer (A ----> 0, B ----> 1, etc...) to compute the average, and the result is converted back into a letter. The quotes equal to [*] are not taken into account for this computation.
[0 to 2] or [A to E] or [*]

NUMBER OF SNOW COVER QUOTES : Field #34 /I1

The number of snow cover quotes for this scene. This number may take 3 values:
1 if there is a single quotation for the scene,
4 if the snow quotation is performed by quadrant,
8 if the snow quotation is performed by 1/8 of scene,
blank if not used.
[1 or 4 or 8 or b]

SNOW COVER QUOTES : Field #36 /A1, 7X or 4A1, 4X or 8A1

One value (0 for "no snow", or 1 for "snow") per scene, or per quadrant, or per 1/8 of scene. Same sequential order as for cloud cover quotes. Equal to blank if not used.
[0 or 1 or b or *] See "CLOUD COVER QUOTES" for the meaning of the value [*]

NUMBER OF SCENE QUALITY QUOTES : Field #38 /I1

The number of scene quality quotes for this scene. This number may take 2 values :
1 if there is a single quote for the whole scene,
4 if the quotes are assigned per 1/4 of scene (the scene being split into 4 "horizontal" stripes).
[1 or 4]

SCENE QUALITY QUOTES : Field #40 /A1, 3X or 4A1

The technical quality of the scene expressed with the following conventions:
- either a single quote for the whole scene,
- or 4 quotes in the following order : upper 1/4 of scene stripe, 2nd 1/4 of scene stripe, 3rd 1/4 of scene stripe, lower 1/4 of scene stripe.
[E] = Excellent
[G] = Good
[P] = Poor
[U] = Unusable
[*] = There was no image lines in the stripe to evaluate the technical quality.
This may occur for the first "incomplete" scene or the last "incomplete" scene of a segment.

AVER. OF SCENE QUALITY QUOTES : Field #42 /A1

Either equal to the scene quality quotes when the number of scene quality quotes equals 1,
or equal to the average of the 4 scene quality quotes (using same method as for average of cloud cover quotes).
[E or G or P or U or *]

GAINS : Field # 44 /I1, 3X or 3I1, 1X or 4I1

Value of the gain number for each spectral band.
- When Monospectral : one single value (format I1, 3X),
- when Multispectral without MIR : 3 values for B1, B2 and B3 (format 3I1, 1X),
- when Multispectral with MIR: 4 values for B1, B2, B3 and MIR (format 4I1).
[0 to 9] (for each value)

TECHNOLOGICAL IMAGING FLAG : Field #46 / A1

0 for standard imaging,
1 for special imaging done for technological purpose (the image may not match any standard criteria),
blank if not used.
[0 or 1 or b]

MIRROR STEP : Field #48 / I2

The value of the mirror step of the HRV when imaging the scene.
[3 to 93]

STEREO PAIR STATUS : Field #50 / A1

Indicates if this scene belongs to a stereo pair.
1 if yes,
blank if unknown.
[1 or b]

IMAGING CONFIGURATION: FIELD #52 / A1

D for "dual mode" (this HRV was imaging in P and XS mode at the same time - SPOT 1, 2 or 3 only),
T for "twin mode" (the two HRVs were operating in twin mode),
I for "independant" (the two HRVs were operating independently from each other),
blank, if unknown
[D or T or I or b]

QUICK LOOK TYPE : Field #54 / A1

The type of the existing Quick Look:
P for photographic,
D for digital,
V for video,
N for "no quick look",
blank if unknown.
[P, D, V, N or b]

REVOLUTION NUMBER : Field #56 / I3

Orbit number within this orbital cycle.
[001 to 369]

MINIMUM SHIFT ALLOWED : Field #58 / A1

Indicates the minimum value of the shift along track which can be applied to this scene for production purposes. This shift is expressed in 1/10 of a scene (i.e. 600 (for SPOT 1, 2, 3, 4) and 1200 (for SPOT5) raw lines in Monospectral, or 300 (for SPOT 1, 2, 3, 4) and 600 (for SPOT5) raw lines in Multispectral), truncated to the lowest integer. With the exception of the first and the last "incomplete" scenes of segment, this value is set to zero. The value is set to "*" if the scene cannot be used for production (number of useful lines too small in the first "incomplete" scene of a segment, or last "incomplete" scene of a segment).
[0 to 9, or *]

MAXIMUM SHIFT ALLOWED : Field #60 /A1

Indicates the maximum value of the shift along track which can be applied to this scene for production purposes. This shift is expressed in 1/10 of a scene (i.e. 600 (for SPOT 1, 2, 3, 4) and 1200 (for SPOT5) raw lines in Monospectral, or 300 (for SPOT 1, 2, 3, 4) and 600 (for SPOT5) raw lines in Multispectral), truncated to the lowest integer. With the exception of the first and the last "incomplete" scenes of segment, this value is set to 9. The value is set to "*" if the scene cannot be used for production (number of useful lines too small in the first "incomplete" scene of a segment, or last "incomplete" scene of a segment).

[0 to 9, or *]

SEGMENT ID : Field #62 /I10

The identification of the segment this scene belongs to.

Blank if ID does not exist for this scene.

[0000000000 to 9999999999]

DELETION/MODIFICATION STATUS : Field #64 /A1

This is a control flag which is used for indicating the actions to be taken on this specific scene in case of deletion or modification of the information. This is used when it is needed to maintain the consistency between the master catalog and duplicate catalogs.

This flag may take the values [b], [D] or [M].

[b]: no action to be taken,

[D]: the scene does not exist any longer and its references have been deleted from the master catalog. Therefore, it has to be removed from the duplicate catalogs,

[M]: the information related to the scene has been modified in the master catalog. The new information which is in this record must supersede the old information in the duplicate catalogs.

[b or D or M]