ACFT - Aircraft Information

ACFT provides miscellaneous information unique to airborne sensors. The ACFT extension is required for all airborne data collections. A single ACFT extension, containing information relative to the capture of its associated image data will be placed in the respective subheader of every NSIF image segment.

ACFTB Format Description

The format and descriptions for the user-defined fields of the ACFTB extension are detailed in Table 1.

TABLE 1 ACFTB – AIRCRAFT INFORMATION EXTENSION FORMAT

R = REQUIRED , C = CONDITIONAL , <> = BCS SPACES ALLOWED FOR ENTIRE FIELD

Field	Name	Size	Value Range	Units	Type
CETAG	Unique Extension Identifier.	6	ACFTB	N/A	R
CEL	Length of Entire Tagged Record.	5	00207	bytes	R
The following fields define ACFTB					
AC_MSN_ID	Aircraft Mission Identification. "NOT AVAILABLE" (two words separated by a single space, but without quotes) shall be used if the mission id is unavailable.	20	Alphanumeric, NOT AVAILABLE		R
AC_TAIL_NO	Aircraft Tail Number	10	Alphanumeric		<R>
AC_TO	Aircraft Take-off. Date and Time, referenced to UTC, in the format CCYYMMDDhhmm, in which CCYY is the year, MM is the month (01–12), DD is the day of the month (01 to 31), hh is the hour (00 to 23), and mm is the minute (00 to 59).	12	CCYYMMDDhhmm		<R>

Field	Name	Size	Value Range	Units	Type
SENSOR_ID_TYPE	Sensor ID_Type. Identifies which sensor type produced the image. For Radar Imagery: SAR For EO-IR: ccff where cc indicates the sensor category: IH (High Altitude / Long Range IR) IM (Medium Altitude IR) IL (Low Altitude IR) MH (Multispectral High Altitude / Long Range) MM (Multispectral Medium Altitude) ML (Multispectral Low Altitude) VH (Visible High Altitude / Long Range) VM (Visible Medium Altitude) VL (Visible Low Altitude) VF (Video Frame) And ff indicates the sensor format: FR (Frame) LS (Line Scan) PB (Pushbroom) PS (Pan Scan) Content of several fields below depends upon the value of this field.	4	Alphanumeric		R

Field	Name	Size	Value Range	Units	Type
SENSOR_ID	Identifies which specific sensor produced the image. Currently allowable values: APG-73 AIP ASARS1 ASARS2 CA236 (Darkstar EO) CA260 CA261 CA265 CA270 CA295 D500 DB110 DS-SAR (Darkstar Radar) GHR (Global Hawk Radar) HYDICE HSAR IRLS (ATARS) LAEO (ATARS) MAEO (ATARS) SIR-C SYERS TSAR (Tactical SAR on Predator) Other values are TBD. Content of several fields below depends upon the value of this field.	6	Alphanumeric		R
SCENE_SOURCE	Scene Source. Indicates the origin of the request for the current scene. A scene is single image or a collection of images providing contiguous coverage of an area of interest. 0 = Pre-Planned 1 to 9 = Sensor Specific: For ASARS-2: 1 = Scene Update (uplink) 2 = Scene Update (manual - via pilot's cockpit display unit) 3 = Immediate Scene (immediate spot or search range adjust) 5 = Preplanned Tape Modification 6 = SSS Other Sensors: TBD.	1	0 to 9		<R>

Field	Name	Size	Value Range	Units	Type
SCNUM	Scene Number. Identifies the current scene, and is determined from the mission plan; except for immediate scenes, where it may have the value 000000, the scenes are numbered from 000001 to 999999. The scene number is only useful to replay/regenerate a specific scene; there is no relationship between the scene number and an exploitation requirement.	6	000000 to 999999		R
PDATE	Processing Date. SAR: when raw data is converted to imagery. EO-IR: when image file is created. CCYY is the year, MM is the month (01–12), and DD is the day of the month (00 to 31). This date changes at midnight UTC.	8	CCYYMMDD		R
IMHOSTNO	Immediate Scene Host. Together with Immediate Scene Request ID below, denotes the scene that the immediate scene was initiated from and can be used to renumber the scene, Example: If the immediate scene was initiated from scene number 000123 and this is the third request from that scene, then the scene number field will be 000000, the immediate scene host field will contain 000123 and the immediate scene request id will contain 000003. Only valid for immediate scenes.	6	000000, 000001 to 999999		R
IMREQID	Immediate Scene Request ID	5	00000 00001 to 99999		R

Field	Name	Size	Value Range	Units	Type

MPLAN	<u>Mission Plan Mode.</u> Defines the current sensor-specific SENSOR_TYPE / SENSOR_ID collection mode.
	For AIP:
	  013
	  014
	  015
	  016
	  017
	  018
	  019
	  020
	For ASARS-2:
	  001
	  002
	  004
	  007
	  008
	  009
	  010
	  011
	  012
	  013
	For APG-73:
	  001
	  002
	Other sensors:
	 SAR – TBD
	 EO-IR:
	  001-003
	  004
	  005
	  006
	  014
	  015
	  016
	017 – 999 are reserved
		3	001 to 999		R

Where the image extends along an extended path, as with SAR Search modes and EO-IR Wide Area Search modes, the entry and exit locations are the specified latitude, longitude and elevation above mean sea level (MSL) of the planned entry and exit points on the centerline of the area contained within the NITF Image Segment.

Where the image is confined to the area about a single reference point, as with Spot modes and Point Target modes, the entry fields contain the specified reference point latitude/longitude/elevation, and the exit fields are filled with spaces.

The location may be expressed in either degrees-minutes-seconds or in decimal degrees.

The format ddmmss.ssX represents degrees (00 to 89), minutes (00 to 59), seconds (00 to 59), and hundredths of seconds (00 to 99) of latitude, with X = N for north or S for south, and dddmmss.ssY represents degrees (000 to 179), minutes (00 to 59), seconds (00 to 59), and hundredths of seconds (00 to 99) of longitude, with Y = E for east or W for west.

The format ±dd.dddddd indicates degrees of latitude (north is positive), and ±ddd.dddddd represents degrees of longitude (east is positive).

Field	Name	Size	Value Range	Units	Type
ENTLOC	Entry Location.	25	ddmmss.ssssX dddmmss.ssssY or ±dd.dddddddd ±ddd.dddddddd		<R>
LOC_ACCY	Location Accuracy. The 90% probable circular error in ENTLOC and EXITLOC positions. Unknown=000000 or 000.00	6	000.01 to 999.99 000000, 000.00	Feet	R
ENTELV	Entry Elevation. Imaging operation entry point ground elevation.	6	-01000 to +30000	feet or meters	<R>
ELV_UNIT	Unit of Elevation. Defines unit for Entry and Exit Altitudes. f=feet, m=meters	1	f or m		<R>
EXITLOC	Exit Location.	25	ddmmss.ssssX dddmmss.ssssY or ±dd.dddddddd ±ddd.dddddddd		<R>
EXITELV	Exit Elevation. Imaging operation exit point ground elevation.	6	-01000 to +30000	feet or meters	<R>
TMAP	True Map Angle. SAR: In Search modes, the true map angle is the angle between the ground projection of the line of sight from the aircraft and the scene centerline. In Spot modes, the true map angle is the angle, measured at the central reference point, between the ground projection of the line of sight from the aircraft and a line parallel to the aircraft desired track heading. EO-IR: The true map angle is defined in the NED coordinate system with origin at the aircraft (aircraft local NED), as the angle between the scene entry line of sight and the instantaneous aircraft track heading vector. The aircraft track-heading vector is obtained by rotating the north unit vector of the aircraft local NED coordinate system in the aircraft local NE plane through the aircraft track-heading angle. The true map angle is measured in the slanted plane containing the scene entry line of sight and the aircraft track-heading vector. This angle is always positive.	7	000.000 to 180.000	degrees	<R>
ROW_SPACING	Row Spacing measured at the center of the image (see Table 2).	7			R

Field	Name	Size	Value Range	Units	Type
	Distance in the image plane between corresponding pixels of adjacent rows measured in feet or meters;		00.0000 to 99.9999	feet or meters	
	or				
	Angular center-to-center distance (pitch) between corresponding pixels of adjacent rows measured in micro-radians.		0000.00 to 9999.99	μ-radians	
	If the actual spacing (or associated units) is unknown, the default value of 0000000 will be entered.		0000000		
ROW_SPACING_UNITS	Unit of Row Spacing. f = feet m = meters r = μ-radians u = unknown spacing	1	f, m, r or u		R
COL_SPACING	Column Spacing measured at the center of the image (see Table 2). Distance in the image plane between adjacent pixels within a row measured in feet or meters;	7	00.0000 to 99.9999	feet or meters	R
	or				
	Angular center-to-center distance (pitch) between adjacent pixels within a row measured in micro-radians.		0000.00 to 9999.99	μ-radians	
	If the actual spacing (or associated units) is unknown, the default value of "0000000" will be entered.		0000000		
COL_SPACING_UNITS	Unit of Column Spacing. f = feet m = meters r = μ-radians u = unknown spacing	1	f, m, r or u		R
FOCAL_LENGTH	Sensor Focal Length. Effective distance from optical lens to sensor element(s), used when either ROW_SPACING_UNITS or COL_SPACING_UNITS indicates micro-radians. 999.99 indicates focal length is not available or not applicable to this sensor.	6	000.01 to 899.99, 999.99	cm	R
SENSERIAL	Sensor vendor's serial number. Serial number of the line replaceable unit (LRU) containing EO-IR imaging electronics or SAR Receiver/Exciter involved in creating the imagery contained in this file.	6	000001 to 999999		<R>
ABSWVER	Airborne Software Version. Airborne software version (vvvv) and Revision (rr) numbers.	7	vvvv.rr		<R>

Field	Name	Size	Value Range	Units	Type
CAL_DATE	<u>Calibration Date</u>. Date sensor was last calibrated. CCYY is the year, MM is the month (01–12), and DD is the day of the month (00 to 31).	8	CCYYMMDD		<R>
PATCH_TOT	<u>Patch Total</u>. Total Number of Patches contained in this file, and therefore, the number of PATCH extensions. 0000 for EO-IR imagery.	4	SAR: Spot: 0000 to 0001 Search: 0000 to 9999 EO-IR: 0000		R
MTI_TOT	<u>MTI Total</u>. Total Number of MTIRP extensions contained in this file. Each MTIRP identifies 1 to 999 moving targets. 000 for EO-IR imagery.	3	SAR: 000 to 999 EO-IR: 000		R

TABLE 2 ROW AND COLUMN SPACING

SENSOR_ID_TYPE	ROW_SPACING	COL_SPACING
SAR	Image plane distance (ft/m)	Image plane distance (ft/m)
ccFR	Angle between pixels (μ-radians)	Angle between pixels (μ-radians)
ccLS	Angle between pixels (μ-radians)	Image plane distance (ft)
ccPB	Image plane distance (ft)	Angle between pixels (μ-radians)
ccPS	Angle between pixels (μ-radians)	Angle between pixels (μ-radians)