EXPLT - Exploitation Related Information

The Exploitation Related Information extension is optional. EXPLT is used with SAR sensors and provides metadata that allows a user program to determine if the image is suitable for the exploitation problem currently being performed. A single EXPLT is placed in the image subheader with the corresponding AIMID and ACFT extensions.

EXPLTB Format Description

The format for the user defined fields of the EXPLTB extension and a description of their contents is detailed in Table 1.

TABLE 1 EXPLTB – EXPLOITATION RELATED 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	EXPLTB	N/A	R
CEL	Length of Entire Tagged Record	5	00101	bytes	R
The following fields define EXPLTB					
ANGLE_TO_ NORTH	Angle, measured clockwise about the origin of the image, from first row of the image to True North.	7	000.000 to 359.999	degrees	R
ANGLE_TO_ NORTH_ ACCY	Angle to North Accuracy. 90% probable error value. Unknown=000000 or 00.000	6	00.001 to 44.999, 000000, 00.000	degrees	R
SQUINT_ ANGLE	The angle measured in degrees from crosstrack (broadside) to the great circle joining the ground point directly below the Aircraft Reference Point (ARP) to the Output Reference Point (ORP). Forward looking squint angles range from +00.000 (broadside) to +85.000 degrees; aft looking squint angles range from –00.000 to –60.000 degrees.	7	-60.000 to +85.000	degrees	R
SQUINT_ ANGLE_ ACCY	Squint Angle Accuracy. 90% probable error value. Unknown=000000 or 00.000	6	00.001 to 44.999, 000000, 00.000	degrees	R

R = REQUIRED , C = CONDITIONAL , <> = BCS SPACES ALLOWED FOR ENTIRE FIELD						
Field	**Name**	**Size**	**Value Range**	**Units**	**Type**
MODE	Mode represents both the collection mode and the processing mode. Subtle differences existing among legacy systems are accommodated by unique mode designations. For ASARS-2 (including AIP, the ASARS Improvement Program): For Search mode imagery the first two characters yy represent the nominal impulse response, in feet, and the third character is "S." For Spot imagery the first character x indicates the collection mode: 1 = SPOT 1 Mode 2 = Point Imaging 3 = SPOT 3 Mode 4 = Repetitive Point The second and third characters indicate the processing (sampling) mode: SP = Slant Plane GP = Ground Plane ES = Enhanced Spot PR = Preview For APG-73: 3SP = Slant Plane Spot 3GP = Ground Mode Spot yyS = Search Mode (same as ASARS-2) For Global Hawk: GSP = Spot Mode, GSH = Search Mode, and GMT = Moving Target Mode.	3	ASARS-2 & AIP: xSP, xGP, xES, xPR, yyS APG-73: 3SP, 3GP, yyS Global Hawk: GSP, GSH, GMT		R
(reserved-001)		16	spaces		R
GRAZE_ANG	The angle, measured in degrees at the target, between the focus plane and line of sight to the radar.	5	00.00 to 90.00	degrees	R
GRAZE_ANG_ ACCY	Accuracy of Grazing Angle. 90% probable error value. Unknown=00000 or 00.00	5	00.01 to 90.00, 00000, 00.00	degrees	R

	R = REQUIRED , C = CONDITIONAL , <> = BCS SPACES ALLOWED FOR ENTIRE FIELD				
Field	**Name**	**Size**	**Value Range**	**Units**	**Type**
SLOPE_ANG	The angle between the SAR plane and the focus plane. Given the GRAZE_ANG ψ and SQUINT_ANGLE θ, the slope angle is determined by the equation shown following this table. Note: SLOPE_ANG is equal to GRAZE_ANG for broadside mapping (θ = 0).	5	00.00 to 90.00	degrees	R
POLAR	The first character indicates the nominal transmit polarization, and the second character indicates the nominal receive polarization. Each can be Horizontal (H) or Vertical (V).	2	HH, HV, VH, VV		R
NSAMP	Pixels per Line (includes fill)	5	00001 to 99999		R
(reserved-002)		1	0		R
SEQ_NUM	Sequence within Coupled Imagery Set	1	1 to 6		<R>
PRIME_ID	Target Designator of primary target	12	alphanumeric		<R>
PRIME_BE	Basic Encyclopedia ID / OSUFFIX (target designator) of the primary target	15	alphanumeric		<R>
(reserved-003)		1	0		R
N_SEC	Number of Secondary Targets in image.† Default = 00.	2	00 to 99		R
IPR	Commanded impulse response.†† Unknown = 00.	2	00 to 99	feet	R

† determines number of SECTGA extensions
†† replicated in each MPDSRA extension

Given the GRAZE_ANG ψ and SQUINT_ANGLE θ, the slope angle is calculated using the following formula.

$$SLOPE\_ANG = COS^{-1}\left[\frac{COS\psi COS\theta}{\sqrt{\left(SIN^2\psi SIN^2\theta + COS^2\theta\right)}}\right]$$