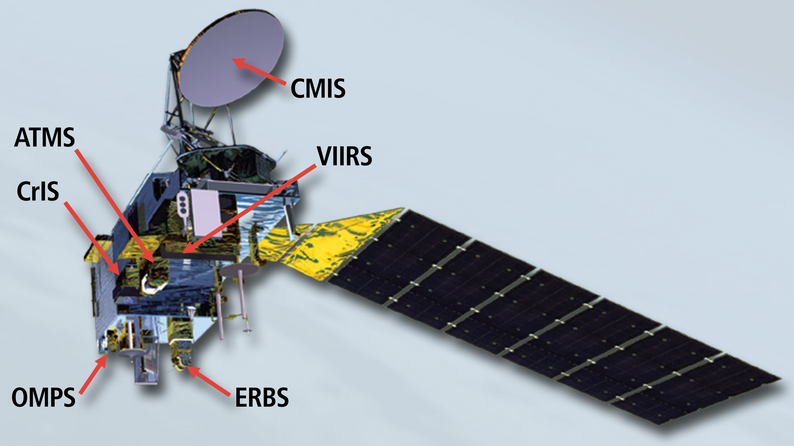
NPOESS Field Terminals
Sensor Configuration and Collected Data

NPOESS 1330 Configuration



Satellites and Sensors by Data Stream

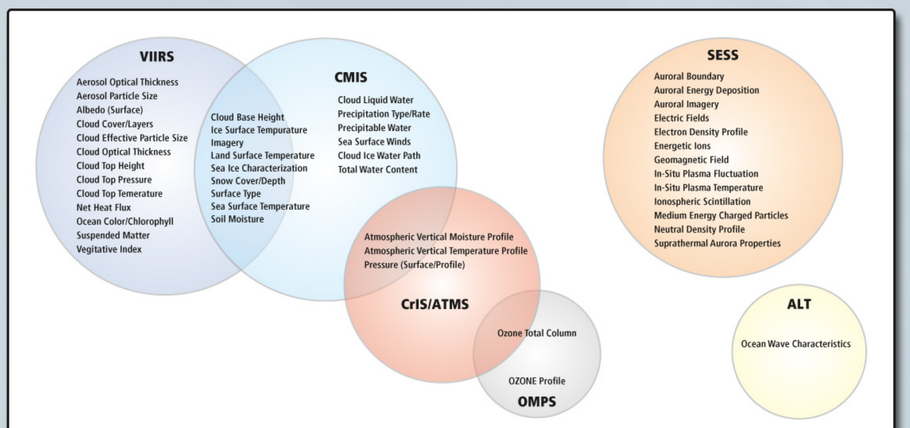
	1330	1730	2130
VIIRS	X	X	X
CMIS	X	X	X
CrIS	X	X	
ATMS	X	X	
SESS	X	X	X
OMPS	X		
ADCS	X	X	
SARSAT			
ERBS			
SS			
ALT		X	
TSIS			
APS			X

HRD – High Rate Data

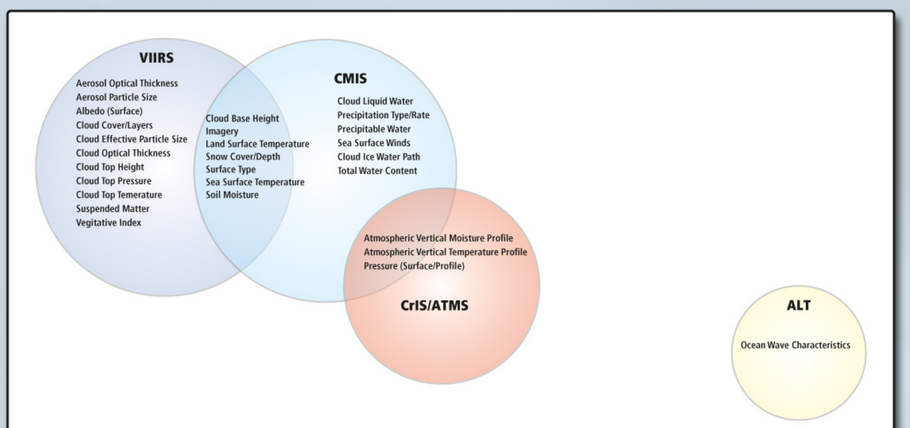
	1330	1730	2130
VIIRS	X	X	X
CMIS	X	X	X
CrIS	X	X	
ATMS	X	X	
SESS			
OMPS			
ADCS	X	X	
SARSAT			
ERBS			
SS			
ALT		X	
TSIS			
APS			

LRD – Low Rate Data

HRD EDR-to-Sensor Mapping



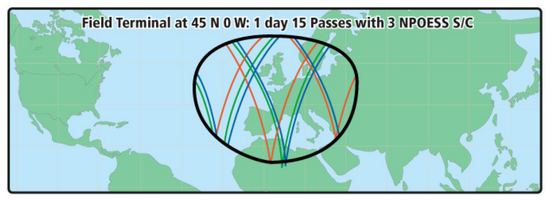
LRD EDR-to-Sensor Mapping



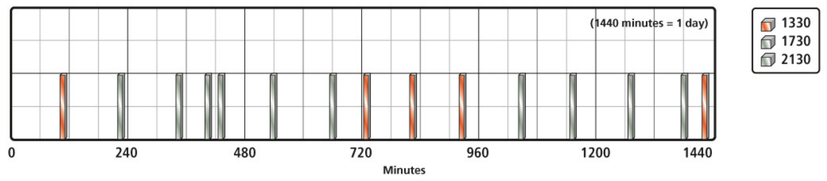
Link Characteristics

Link Parameter	HRD	LRD
Channel Data Rate	40 Mbps	7.76 Mbps
Modulation with bit interleaving	SQPSK with square root raised cosine pulse shaping [alpha = 0.5]	SQPSK with square root raised cosine pulse shaping [alpha = 0.5]
Coding	(255, 223) Reed-Solomon with I=4	(255, 223) Reed-Solomon with I=4
Convolutional Encoding: Code Rate Constraint Length Connection Vectors Phase relationship Symbol inversion Number of encoders Branch Encoder Sent to I Modulator Sent to Q Modulator	 ½ 7 bits G1=1111001, G2=1011011 G1 associated with first symbol On output path of G2 1 No G1 Symbol inverted G2	 ½ 7 bits G1=1111001, G2=1011011 G1 associated with first symbol On output path of G2 1 No G1 Symbol inverted G2
Randomization	$h(x) = x^8 + x^7 + x^5 + x^3 + 1$	$h(x) = x^8 + x^7 + x^5 + x^3 + 1$
Maximum Occupied Bandwidth (98% power)	30.8 MHz	6.0 MHz
BER after decoding	$< 10^{-8}$	$< 10^{-8}$
Carrier Frequency	7834 MHz	1707.0 MHz
Polarization	RHCP	RHCP
Minimum elevation angle	5.0 degrees	5.0 degrees
Orbit-averaged availability	99.6%	99.6%
Data Format	NRZ-M (Prior to Convolutional encoder)	NRZ-M (Prior to Convolutional encoder)

Typical FTS Contacts



FTS Contacts with NPOESS S/C



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