RayFile Varialbes

Variable	Ray	Calib	Type	index	Notes	Dorade Notes	NcRadar Notes
number_of_cells			integer		When writing, must be set by the application. Is not computed based on vector size or segment attributes.		
cell_spacing_method			integer		Cell spacing methods: 0: Cell spacing by vector 1: Cell spacing by segment		Right now NcRadar can only use Cell spacing by segment. And, number_of_segments must be 1.
number_of_cell_segments			integer		Used in cell spacing by segment		
meters_to_first_cell			double		Used in cell spacing by segment. Range in meters to the center of the first cell.		
segment_cell_spacing			double(indexed)	segment	In meters.		
segment_cell_count			integer(indexed)	segment			
number_of_fields			integer				
field_name			string(indexed)	field		In Dorade field names will be truncated to 8 characters.	
field_long_name			string(indexed)	field		In Dorade long name will be truncated to 40 characters.	
field_units			integer(indexed)	field	From RayConst: 0: unknown 1: none 2: dBz 3: dBm 4: m/s		
number_of_samples			integer				
field_polarization			integer		Defined in RayConst.h		
binary_format			integer(indexed)	field	From RayConst: 0: unknown 1: 1 byte integer 2: 2 byte integer 3: 3 byte integer 4: 4 byte float 5: 2 byte float	DoradeFile class will only handle binary formats 1,2 and 4. Not sure if soloii will handle type 4.	NcRadarFile will now only handle binary formats 2 and 4.
parameter_scale			double(indexed)	field	Used to convert data from integer types to float types.		
parameter_bias			double(indexed)	field	Used to convert data from integer types to float types		
bad_data			double	field	Need to look into how to use this properly.		Is missing_value field attribute.
platform_name			string				
platform_type			integer		Defined in RayConst.h		
radar_constant			double				
peak_power			double				
noise_power			double				

RayFile Varialbes

Variable	Ray	Calib	Type	index	Notes	Dorade Notes	NcRadar Notes
receiver_gain			double				
antenna_gain			double				
system_gain			double				
horizontal_beam_width			double				
vertical_beam_width			double				
scan_mode			integer		From RayConst: 0: CAL Calibration 1: PPI Constant Elevation 2: COP Coplanier 3: RHI Constant Azimuth 4: VER Vertical Pointing 5: TAR Target 6: MAN Manual 7: IDL Idle 8: SUR 9: AIR 10: HOR		
platform_longitude			double		In decimal degrees.		
platform_longitude			double		In decimal degrees.		
platform_altitude			double		In meters.		
nyquist_velocity			double		in meters/second.		
unambiguous_range			double		meters		
number_of_frequencies			integer			In DoradeFile, limited to 5.	In NcRadarFile, limited to
frequency			double(indexed)	frequency	In Hertz.		
number_of_prfs			integer			In DoradeFile, limeted to 5.	In NcRadarFile, limited to
pulse_repetition_frequency			double(indexed)	prf	In pulses/second.		
pulse_width			double		In seconds.		
ray_azimuth	X		RaycAngle		0 degrees is North, 90 is East.		
ray_elevation	X		RaycAngle		For Ground Base radars: 0 degrees is horizon. Up is 90, 270 is down.		
ray_time	X		RaycTime				
ray_true_scan_rate	X		double		In degrees/second		Not used in NcRadarFile.
ray_status	X		integer		From RayConst: 0: normal 1: transition 2: bad		
sweep_number			integer				
number_of_rays			integer				
fixed_angle			RaycAngle				
start_angle			RaycAngle				
stop_angle			RaycAngle				
volume_number			integer				
project_name			string				
start_time			RaycTime				
stop_time			RaycTime				
file_name			string				
directory_name			string				

Variable	Ray	Calib	Type	index	Notes	Dorade Notes	NcRadar Notes
band_width			double		Computed as inverse of pulse_width. Measured in Hertz.		
transmitter_power			double			Not represented in Dorade	
test_pulse_power			double			Not represented in Dorade	
test_pulse_start_range			double			Not represented in Dorade	
test_pulse_end_range			double			Not represented in Dorade	
test_pulse_present			bool			Not represented in Dorade.	Add to NcRadar ?
calibration_data_present			bool			Not represented in Dorade.	
horizontal_antenna_gain_db		X	double			Not represented in Dorade.	ant_gain_h_db
vertical_antenna_gain_db		X	double			Not represented in Dorade.	ant_gain_v_db
horizontal_transmitter_power_dbm		X	double			Not represented in Dorade.	xmit_power_h_dbm
vertical_transmitter_power_dbm		X	double			Not represented in Dorade.	xmit_power_v_dbm
horizontal_two_way_waveguide_loss_db		X	double		Horizontal 2-way waveguide loss from feedhorn to measurement plane. Set to 0 if the loss is incorporated into the antenna gain. In db.	Not represented in Dorade.	two_way_wave_guide_lose_h_db
vertical_two_way_waveguide_loss_db		X	double		Vertical 2-way waveguide loss from feedhorn to measurement plane. Set to 0 if the loss is incorporated into the antenna gain. In db.	Not represented in Dorade.	two_way_wave_guide_lose_v_db
horizontal_two_way_radome_loss_db		X	double		Horizonal 2-way radome. Set to 0 if the loss is incorporated into the antenna gain. In db.	Not represented in Dorade.	two_way_wave_radome_loss_h_db
vertical_two_way_radome_loss_db		X	double		Vertical 2-way radome. Set to 0 if the loss is incorporated into the antenna gain. In db.	Not represented in Dorade.	two_way_wave_radome_loss_v_db
receiver_mismatch_loss_db		X	double			Not represented in Dorade.	receiver_mismatch_loss_db
horizontal_radar_constant		X	double			Not represented in Dorade.	radar_constant_h
vertical_radar_constant		X	double			Not represented in Dorade.	radar_constant_v
horizontal_co_polar_noise_dbm		X	double		Noise level. Calibration SNR SNR is computed relative to these noise values.	Not represented in Dorade.	noise_hc_dbm
vertical_co_polar_noise_dbm		X	double		Noise level. Calibration SNR SNR is computed relative to these noise values.	Not represented in Dorade.	noise_vc_dbm
horizontal_cross_polar_noise_dbm		X	double		Noise level. Calibration SNR SNR is computed relative to these noise values.	Not represented in Dorade.	noise_hx_dbm
vertical_cross_polar_noise_dbm		X	double		Noise level. Calibration SNR SNR is computed relative to these noise values.	Not represented in Dorade.	noise_vx_dbm

RayFile Varialbes

Variable	Ray	Calib	Type	index	Notes	Dorade Notes	NcRadar Notes
horizontal_co_polar_receiver_gain_db		X	double		Receiver gain in db. Gain from waveguide power to digitized power.	Not represented in Dorade.	receiver_gain_hc_db
vertical_co_polar_receiver_gain_db		X	double		Receiver gain in db. Gain from waveguide power to digitized power.	Not represented in Dorade.	receiver_gain_vc_db
horizontal_cross_polar_receiver_gain_db		X	double		Receiver gain in db. Gain from waveguide power to digitized power.	Not represented in Dorade.	receiver_gain_hx_db
vertical_cross_polar_receiver_gain_db		X	double		Receiver gain in db. Gain from waveguide power to digitized power.	Not represented in Dorade.	receiver_gain_vx_db
horizontal_co_polar_base_dbz_at_1km		X	double		Base reflectivity at 1 km.	Not represented in Dorade.	base_1km_hc_dbz
vertical_co_polar_base_dbz_at_1km		X	double		Base reflectivity at 1 km.	Not represented in Dorade.	base_1km_vc_dbz
horizontal_cross_polar_base_dbz_at_1km		X	double		Base reflectivity at 1 km.	Not represented in Dorade.	base_1km_hx_dbz
vertical_cross_polar_base_dbz_at_1km		X	double		Base reflectivity at 1 km.	Not represented in Dorade.	base_1km_vx_dbz
horizontal_co_polar_sun_power_dbm		X	double		Sun power in dbm.	Not represented in Dorade.	sun_power_hc_dbm
vertical_co_polar_sun_power_dbm		X	double		Sun power in dbm.	Not represented in Dorade.	sun_power_vc_dbm
horizontal_cross_polar_sun_power_dbm		X	double		Sun power in dbm.	Not represented in Dorade.	sun_power_hx_dbm
vertical_cross_polar_sun_power_dbm		X	double		Sun power in dbm.	Not represented in Dorade.	sun_power_vx_dbm
horizontal_noise_source_power_dbm		X	double			Not represented in Dorade.	noise_source_power_h_dbm
vertical_noise_source_poser_dbm		X	double			Not represented in Dorade.	noise_source_power_v_dbm
horizontal_power_measurement_loss_db		X	double		Power measurement loss from ref. Point to power meter sensor.	Not represented in Dorade.	power_measurement_loss_h_db
vertical_power_measurement_loss_db		X	double		Power measurement loss from ref. Point to power meter sensor.	Not represented in Dorade.	power_measurement_loss_v_db
horizontal_coupler_forward_loss_db		X	double		Directional coupler forward loss. This will be negative.	Not represented in Dorade.	coupler_forward_loss_h_db
vertical_coupler_forward_loss_db		X	double		Directional coupler forward loss. This will be negative.	Not represented in Dorade.	coupler_forward_loss_v_db
zdr_correction_db		X	double			Not represented in Dorade.	zdr_correction_db
horizontal_ldr_correction_db		X	double			Not represented in Dorade.	ldr_correction_h_db
vertical_ldr_correction_db		X	double			Not represented in Dorade.	ldr_correction_v_db
system_phidp_degrees		X	double			Not represented in Dorade.	system_phidp_deg