SPAMOR - sensor record file **CSV File description**

	Index CSV	Description	Unit	Format	Range	Sample	Remarque	
Header	0	number of the record	-	%u	0 -> n-1	0		15;2.5855;
	1	t0	s	%.4lf	0.0 ->	0.5312	System_time at the beginning of the sequence; 0 value: start of the measure sequence	
GPS	2	tag				<GPS>		<GPS>;2016/04/27 12:55:24;0;7;1.30000;296.30000;800.57;5.00;47.155565;7.002855;0.0552;
	3	dateTime	Date	%s		2016/04/27 12:55:24	YYYY/MM/DD/ hh:mm:ss (one space)	
	4	utcOffset	Hour	%d		0		
	5	satCount	-	%u	4 -> 32	7		
	6	dilution	-	%.5lf	8.0 -> 1.0	1.30000	> 8.0: not acceptable; 1.0 : optimal	
	7	direction	°	%.5lf	0.0 -> 360.0	296.30000	Current move bearing in degrees, zero is the true (geographic) north	
	8	altitude	m	%.2lf	-1500 -> 100,000	800.57	Above sea level	
	9	groundSpeed	km/h	%.2lf	0.0 -> 2160	5.00	Accel max: 2G	
	10	latitude	deg°min'sec"	%s		47.155565	Current latitude : format : degrés	
	11	longitude	deg°min'sec"	%s		7.002855	Current longitude : format : degrés	
	12	dt	s	%.4lf		0.0552	Delta time after the GPS acquisition (system_time-t0)	
IMU	13	tag				<IMU>	Inertial Measurement Unit	<IMU>;1.800;0.000;199.100;1.000;0.032;0.001;1486.000;7.000;-64.000;-9888.000;3.900;0.400;-0.700;0.1545;
	14	pitch	°	%.3lf		1.800		
	15	roll	°	%.3lf		0.000		
	16	compass	°	%.3lf		199.100	Relative bearing	the relative bearing of an object is the clockwise angle in degrees from the heading of the vessel to a straight
	17	accelX	G	%.3lf		1.000		line drawn from the observation station on the vessel to the object.
	18	accelY	G	%.3lf	0 -> 16 G	0.032		
	19	accelZ	G	%.3lf		0.001		
	20	gyroQuatW	quaternion	%.3lf		1486.000	The quaternion describing the device estimated orientation,	????
	21	gyroQuatX	quaternion	%.3lf		7.000	based on the integration of gyroscopic measures combined	
	22	gyroQuatY	quaternion	%.3lf		-64.000	with acceleration and magnetic field measurements.	
	23	gyroQuatZ	quaternion	%.3lf		-9888.000	?????	
	24	gyroSpeedX	°/s	%.3lf		3.900	Angular speed rotation arround X axis	
	25	gyroSpeedY	°/s	%.3lf	2000 °/s	0.400	Angular speed rotation arround Y axis	
	26	gyroSpeedZ	°/s	%.3lf		-0.700	Angular speed rotation arround Z axis	
	27	measure duration	s	%.4lf		0.1545	Delta time after the IMU acquisition (system_time-t0)	Slower sensor is IMU
CODERS	28	tag				<CODERS>		<CODERS>;146.898500;141.977500;0.1645;
	29	left wheel distance	m	%.4lf	0.0 ->	146.8985	**Forward only !** Wheel diameter: 0.3175m, 15 impulsions/revolution	
	30	right wheel distance	m	%.4lf	0.0 ->	141.9775	=> 0.0665 m/impulsion	
	31	dt	s	%.4lf		0.1645	Delta time after the CODERS acquisition (system_time-t0)	
SCAN2D	32	tag				<SCAN2D>		<SCAN2D>;1.0000;0.0000;-45.000000;0.333300;811;0.00000;…;6.07900;0.1711;
	33	scale factor	-	%.4lf		1.0000	Never change	
	34	scale factor offset	-	%.4lf		0.0000	Never change	
	35	start angle	°	%.6lf		-45.000000	Never change	
	36	step increment	°	%.6lf		0.333300	Never change	
	37	step count	-	%u		811	Never change : 270°- -45° = 270° ; 270/0.3333 = 811	
	38	distance_000	m	%.5lf	0.0 -> 10.000	0.00000	First distance value for angle -45.0°	
	...	...	...	...	...	...	If the distance is out of range (> 10.000m), zero is returned	
	848	distance_810	m	%.5lf	0.0 -> 10.000	4.70800	Last distance value for angle +270.0°	
	849	**dt_tot**	s	%.4lf		**0.1711**	Delta time after the SCAN2D acquisition (system_time-t0)	**=> duration of the record acquisition**