



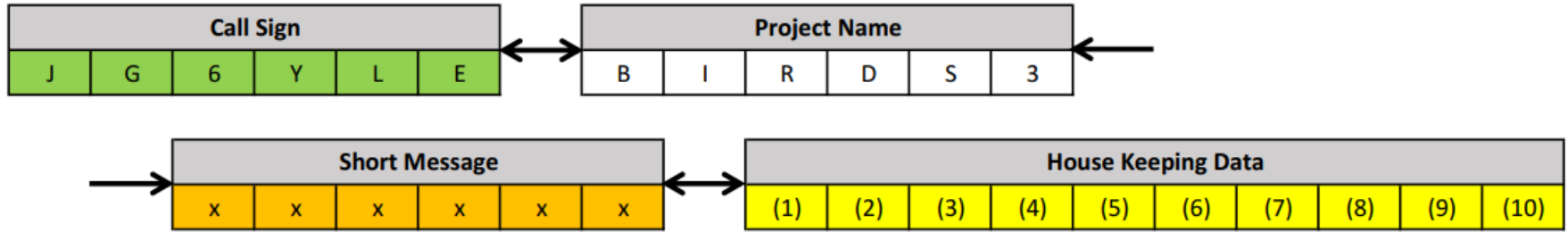
BIRDS3 CW format and Timing

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Makiko Kishimoto and BIRDS-3 team



CW Format



Call Sign

- Uguisu (Japan): JG6YLE
- NepaliSat-1 (Nepal): JG6YLF
- Raavana-1 (Sri Lanka): JG6YLG

Short Message

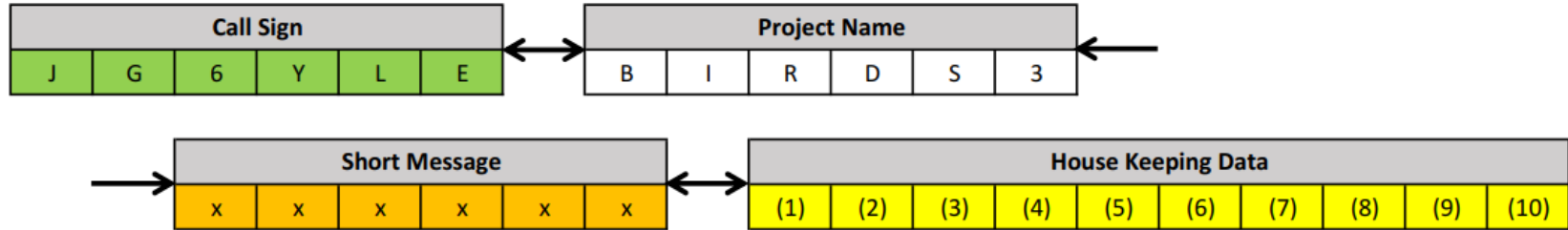
BIRDS-3 will send short message to satellites which is from Amateur radio community or organization whose GS has callsign.

House Keeping Data

There are 5 bytes (40 bits) data and it shows satellite's health condition.



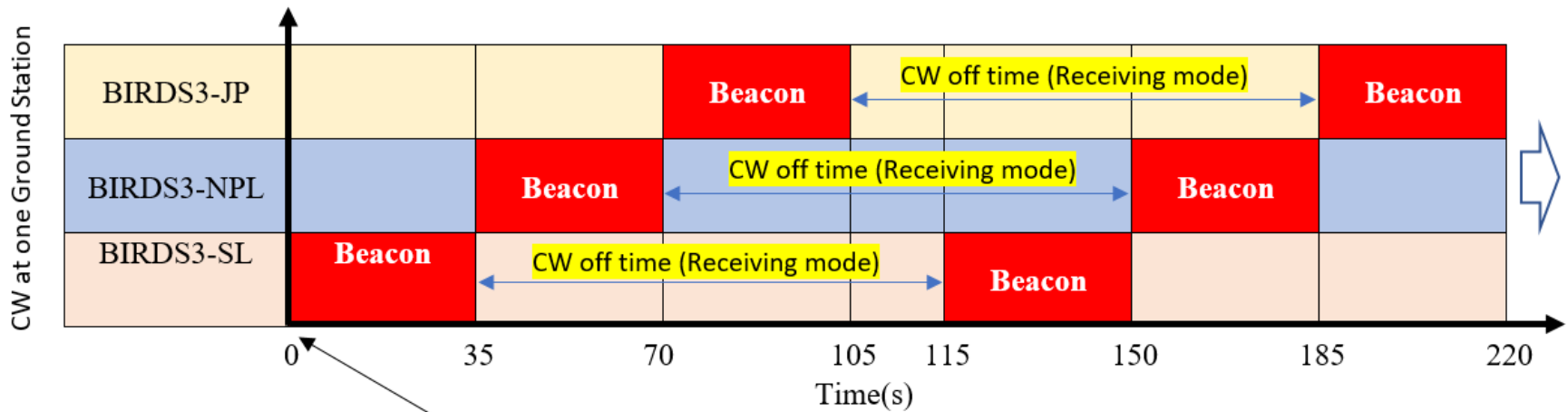
House Keeping Format



Type1			Type2		
Cell Number	Data	bit	Cell Number	Data	bit
(1)	Battery Voltage (mV)	8bit	(1)	Gyro X axis (deg/s)	8bit
(2)					
(3)	Battery Current (mA)	8bit	(3)	Gyro Y axis (deg/s)	8bit
(4)					
(5)	Battery Temperature (°C)	8bit	(5)	Gyro Z axis (deg/s)	8bit
(6)					
(7)	Format identifier "0" (Data Type 1)	1bit	(7)	Format identifier "1" (data type 2)	1bit
	Operation Modes --> 11: Normal 10: Low power 01	2bit		HSSC Automatical Trial ----> 1: 0 0: x	1bit
	Kill Switch Main ----> Nomal:0 Kill:1	1bit		CAM Automatical Trial ----> 1: 0 0: x	1bit
Kill Switch FAB ----> Nomal:0 Kill:1	1bit	ADCS Automatical Trial ----> 1: 0 0: x		1bit	
(8)	Antenna deploy status-----> Success:1 Unsuccess:0	1bit	(8)	LDM Automatical Trial ----> 1: 0 0: x	1bit
	Solar cell +X-----> Sunshine:1 Shadow:0	1bit		Battery Heater -----> ON:1 OFF:0	1bit
	Solar cell -Y-----> Sunshine:1 Shadow:0	1bit		Reservation command ----> Reserve:1 Nothing:0	1bit
Solar cell -Z-----> Sunshine:1 Shadow:0	1bit	Uplink Success ----> Success:1 Not Success:0		1bit	
(9)	Solar cell +Y-----> Sunshine:1 Shadow:0	1bit	(9)	CPLD Temperature (°C)	8bit
	Solar cell +Z-----> Sunshine:1 Shadow:0	1bit			
	(10)	Time after last reset (number of hours)	5bit	(10)	



CW Timing



Set by Deployment Switch or "CW Reference Command" from Ground