

IWG1 ASCII Packet Definition

- String will be prefaced with `IWG1` as the magic-cookie to identify this stream.
 - The date-time (UTC) field will use [iso-8601](#), any of the following [iso-8601](#) forms is acceptable:
 - `yyyy-mm-ddThh:mm:ss`
 - `yyyy-mm-dd hh:mm:ss`
 - `yyyymmddThhmmss`
 - Omitted time-zone shall be interpreted as UTC. This deviates from the [iso-8601](#) specification which specifies no time zone information to be interpreted as local time.
 - Values will be comma separated. This will allow for little loss of bandwidth for missing values.
 - Data values other than date will be in any format acceptable to the ANSI C string-to-double function `strtod(3)`.
 - Recommend to implemetors to use appropriate significant figures.
 - `inf` and `nan` are acceptable.
 - Fields not supplied or available will be left empty (e.g. `'...,4.523,,48.234,...`).
 - String will be terminated by `\r\n` (carriage return, newline).
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Example Format

```
IWG1,yyyy-mm-ddThh:mm:ss,value,value,value,,value\r\nIWG1,yyyymmddThhmmss,value,value,value,,value\r\n
```

Example String

```
IWG1,20010920T145530,15.7738,-  
96.2707,137.462,,132.551,19971.1,12.725,13.1574,24.6281,0.00140  
888,0.0235585,258.411,258.348,0.138373,0.838461,0.492826,0,0,29  
.7952,20.2783,29.8763,998.294,0.984893,996.779,0,0,0,0.910509,0.  
660288,,\r\n
```

Parameter List

The list of variables will be fixed in the following order, these are all platform 'best' values. Custom parameters may be added **at the end** of this list on a per platform then per deployment basis.

Short Name	Units	Range	Description
Date/Time	UTC		ISO-8601 formatted date and time
Lat	degree_N (dec)	-90 to 90	Platform Latitude
Lon	degree_E (dec)	-180 to 179.9999	Platform Longitude
GPS_MSL_Alt	m		GPS Altitude, Mean Sea Level (MSL)
WGS_84_Alt	m		WGS 84 Geoid Altitude
Press_Alt	feet		Pressure Altitude
Radar_Alt	feet	Zero or greater	Radar Altimeter Altitude
Grnd_Spd	m/s		Ground Speed
True_Airspeed	m/s		True Airspeed
Indicated_Airspeed	knots		Indicated Airspeed
Mach_Number			Aircraft Mach Number
Vert_Velocity	m/s	[3]	Aircraft Vertical Velocity
True_Hdg	degrees_true	0 to 359.9999	True Heading
Track	degrees_true	0 to 359.9999	Track Angle
Drift	degrees		Drift Angle
Pitch	degrees	-90 to 90 [1]	Pitch
Roll	degrees	-90 to 90 [2]	Roll
Side_slip	degrees		Side Slip Angle
Angle_of_Attack	degrees	-90 to 90 [1]	Angle of Attack
Ambient_Temp	degrees_C		Ambient Temperature

Dew_Point	degrees_C		Dew Point
Total_Temp	degrees_C		Total Temperature
Static_Press	mbar		Static Pressure
Dynamic_Press	mbar		Dynamic Pressure (total minus static)
Cabin_Pressure	mbar		Cabin Pressure / Altitude
Wind_Speed	m/s	Zero or greater	Wind Speed
Wind_Dir	degrees_true	0 to 359.9999	Wind Direction
Vert_Wind_Spd	m/s	[3]	Vertical Wind Speed
Solar_Zenith	degrees		Solar Zenith Angle
Sun_Elev_AC	degrees		Sun Elevation from Aircraft
Sun_Az_Grd	degrees_true	0 to 359.9999	Sun Azimuth from Ground
Sun_Az_AC	degrees_true	0 to 359.9999	Sun Azimuth from Aircraft

[1] Negative is nose down, positive is nose up.

[2] Negative is left wing down, positive is right wing down.

[3] Negative is downward, positive is upward.