



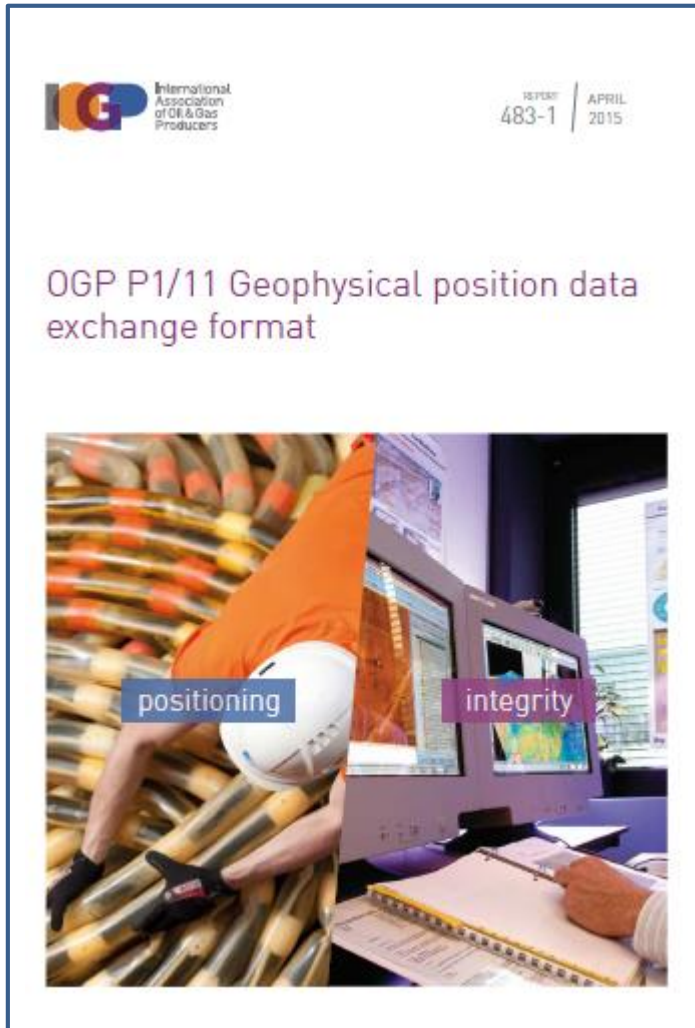
International
Association
of Oil & Gas
Producers

IOGP P-Formats

Tony Blackburn
10th March 2016



IOGP P-Formats



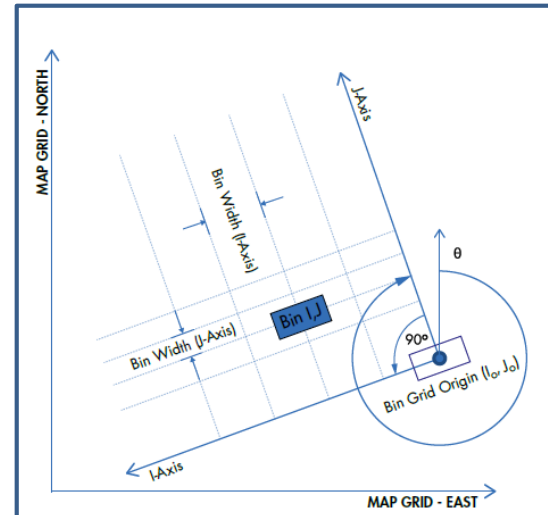
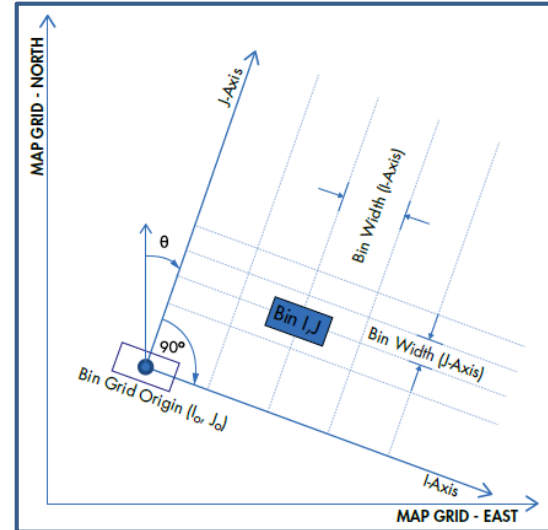
<http://www.iogp.org/Geomatics#2521696-geophysical-operations>

IOGP P-Formats



REPORT
483-6 | JANUARY
2016

IOGP P6/11 Seismic bin grid data exchange format



<http://www.iogp.org/Geomatics#2521696-geophysical-operations>

Appearance of P1/11 Position Data Records

```
S1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3, G2,1,,391297.20,4092985.70,,36.97671040,-16.22131009,,36.97671040,-16.22131009,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 2, G1,1,,391341.10,4092961.70,,36.97649917,-16.22081351,,36.97649917,-16.22081351,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3, G2,1,,391297.20,4092985.70,,36.97671040,-16.22131009,,36.97671040,-16.22131009,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&4, G2&S1,1,,391436.30,4092730.50,,36.97442649,-16.21971087,,36.97442649,-16.21971087,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&5, G2&S2,1,,391392.60,4092755.00,,36.97464225,-16.22020526,,36.97464225,-16.22020526,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&6, G2&S3,1,,391349.00,4092779.40,,36.97485712,-16.22069852,,36.97485712,-16.22069852,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&7, G2&S4,1,,391305.30,4092803.90,,36.97507287,-16.22119292,,36.97507287,-16.22119292,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&8, G2&S5,1,,391261.60,4092828.30,,36.97528773,-16.22168731,,36.97528773,-16.22168731,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&9, G2&S6,1,,391218.00,4092852.70,,36.97550259,-16.22218057,,36.97550259,-16.22218057,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&10, G2&S7,1,,391174.40,4092877.20,,36.97571835,-16.22267386,,36.97571835,-16.22267386,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&11, G2&S8,1,,391130.70,4092901.70,,36.97593410,-16.22316827,,36.97593410,-16.22316827,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&12, G2&S9,1,,391087.00,4092926.10,,36.97614894,-16.22366266,,36.97614894,-16.22366266,,,,,,
P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0, 3&13, G2&S10,1,,391043.40,4092950.60,,36.97636469,-16.22415595,,36.97636469,-16.22415595,,,,,,
```

Any number of receiver positions allowed per record. One per record best if human readability required:

```
R1,1, 111,,1719,,1,2011:084:10:55:20.0, 4,R1,4,1,163434.5,2453047.7,,60.70123028,-151.87862880,,60.70066116,-151.88088741,,,,,,19.0;-13.3
R1,1, 111,,1721,,1,2011:084:10:54:34.0, 4,R1,4,1,163502.4,2452899.8,,60.70083119,-151.87822644,,60.70026205,-151.88048505,,,,,,23.0;-16.9
R1,1, 111,,1723,,1,2011:084:10:53:55.0, 4,R1,4,1,163560.2,2452745.5,,60.70041382,-151.87787941,,60.69984466,-151.88013802,,,,,,26.0;-20.2
R1,1, 111,,1725,,1,2011:084:10:53:10.0, 4,R1,4,1,163615.8,2452589.3,,60.69999108,-151.87754436,,60.69942190,-151.87980296,,,,,,29.0;-23.2
R1,1, 111,,1727,,1,2011:084:10:52:26.0, 4,R1,4,1,163681.1,2452438.5,,60.69958386,-151.87715608,,60.69901466,-151.87941467,,,,,,31.0;-25.4
R1,1, 111,,1729,,1,2011:084:10:51:41.0, 4,R1,4,1,163731.2,2452280.7,,60.69915631,-151.87685147,,60.69858709,-151.87911005,,,,,,33.0;-27.0
R1,1, 111,,1731,,1,2011:084:10:50:50.0, 4,R1,4,1,163794.5,2452129.3,,60.69874729,-151.87647426,,60.69817806,-151.87873283,,,,,,34.9;-28.9
R1,1, 111,,1733,,1,2011:084:10:48:50.0, 4,R1,4,1,163791.2,2451951.5,,60.69826088,-151.87646433,,60.69769163,-151.87872289,,,,,,36.9;-30.7
R1,1, 111,,1735,,1,2011:084:10:47:14.0, 4,R1,4,1,163896.1,2451813.7,,60.69789229,-151.87585727,,60.69732303,-151.87811583,,,,,,35.9;-29.8
R1,1, 111,,1737,,1,2011:084:10:46:12.0, 4,R1,4,1,163962.0,2451662.0,,60.69748265,-151.87546554,,60.69691337,-151.87772409,,,,,,34.8;-29.3
R1,1, 111,,1739,,1,2011:084:10:45:20.0, 4,R1,4,1,164023.9,2451509.2,,60.69706969,-151.87509596,,60.69650039,-151.87735450,,,,,,35.8;-29.7
R1,1, 111,,1741,,1,2011:084:10:44:26.0, 4,R1,4,1,164098.7,2451360.9,,60.69667004,-151.87465515,,60.69610072,-151.87691366,,,,,,35.8;-29.6
R1,1, 111,,1743,,1,2011:084:10:43:37.0, 4,R1,4,1,164157.4,2451207.3,,60.69625464,-151.87430331,,60.69568530,-151.87656178,,,,,,34.8;-28.6
```


Exchange Format for Position Data – Legacy vs. New

P1/90:

VT21021P1002 1 1001365847.20N01613 9.03W 391491.54093323.6 17.3246145623

P1/11:

P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0,1,V1,2,,391491.50,4093323.60,,36.97977813
,-16.21917611,,36.97974444,-16.21916422,,,,,,,,,17.30

P1/11 Extraction Tool, by Tony Blackburn, 2015

ENTER one P1/11 (v1.1) record below:

P1,0,T21021P1002,,1001,,1,2010:246:14:56:23.0,1,V1,2,,391491.50,4093323.60,,36.97977813,-16.21917611,,36.97974444,-16.21916422,,,,,,,,,17.30

Position Object Data record

Header: P1

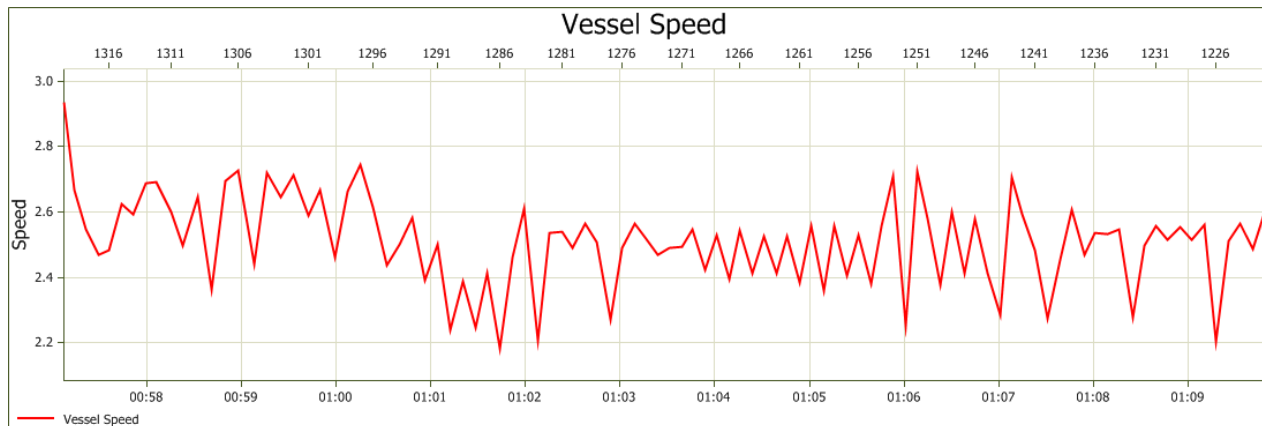
Record contents: P1 Position Record

FIELD NUMBER	FIELD CONTENTS	VALUE
1	Record Identifier	P1
2	Record Version	0
3	Acquisition Line Name	T21021P1002
4	Preplot Line Name	
5	Acquisition Point Number	1001
6	Preplot Point Number	
7	Index Number	1
8	Time	2010:246:14:56:23.0
9	Object Ref. Number	1
10	Object Short Name	V1
11	Record Type Number	2
12	(Dummy field)	
13	CRS A Coordinate 1	391491.50
14	CRS A Coordinate 2	4093323.60
15	CRS A Coordinate 3	
16	CRS B Coordinate 1	36.97977813
17	CRS B Coordinate 2	-16.21917611
18	CRS B Coordinate 3	
19	CRS C Coordinate 1	36.97974444
20	CRS C Coordinate 2	-16.21916422
21	CRS C Coordinate 3	
22	Error Ellipse Horizontal Semi Major Axis or Radial Error Estimate	
23	Error Ellipse Horizontal Semi Minor Axis	
24	Error Ellipse Horizontal Azimuth	
25	Error Ellipse Vertical Axis or Height Error Estimate	
26	Additional Quality Measures	
27	Additional Data Fields	17.30

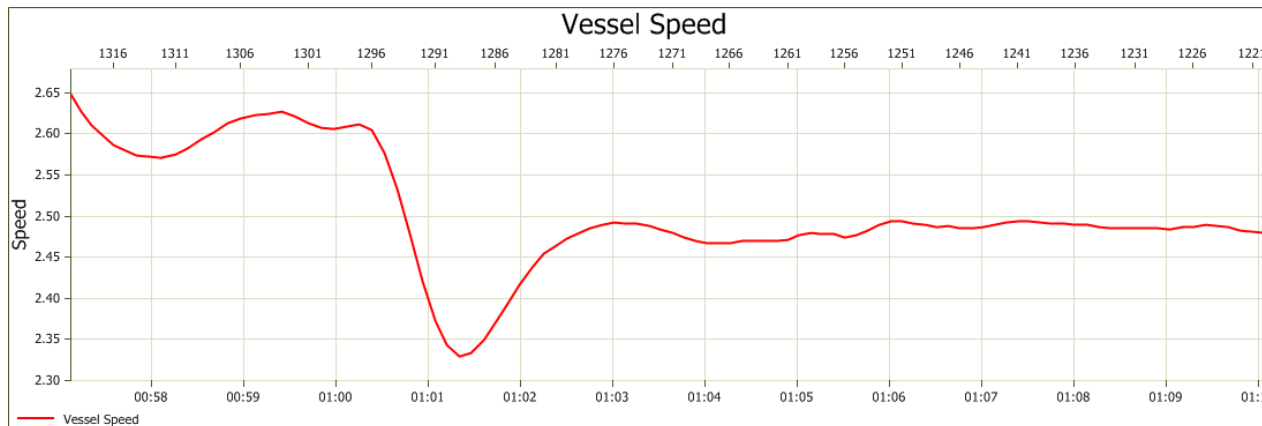
P-/11 more accurate

P1/90 files write time to nearest integer second due to fixed field length.
P1/11 files write time and position to the precision recorded.

A simple example of the effects of position and time precision differences between the P1/90 and P1/11 formats is demonstrated below:



Vessel speed
derived from
P1/90 time &
position data



(Data from same line)

Vessel speed
derived from
P1/11 time &
position data

Image courtesy Midpoint Geo

Common Header

- Common across all P-/11 Formats
- Contains the key metadata about a survey
 - Survey summary
 - Reference Systems definition
 - Units of measure
 - Time reference systems
 - Coordinate reference systems
 - Survey configuration
 - Object definition including sources and receivers
- Denoted by 'HC' at start of each record

Common Header: CRS example

CRS implicit identification record block for a typical North Sea survey:

```
HC,1,3,0,CRS Number/EPSPG Code/Name/Source...,1, 4326,WGS 84,8.2,2013:05:14,EPSPG,Loaded from EPSPG_v8_2.mdb
HC,1,3,0,CRS Number/EPSPG Code/Name/Source...,2, 4230,ED50,8.2,2013:05:14,EPSPG,Loaded from EPSPG_v8_2.mdb
HC,1,3,0,CRS Number/EPSPG Code/Name/Source...,3,23030,ED50 / UTM zone 30N,8.2,2013:05:14,EPSPG,Loaded from
EPSPG_v8_2.mdb
HC,1,3,0,CRS Number/EPSPG Code/Name/Source...,4, 5831,Instantaneous Water Level depth, 8.6,
2012:08:10,EPSPG,Loaded from EPSPG_v8_6.mdb
HC,1,3,0,CRS Number/EPSPG Code/Name/Source...,5, ,ED50 / UTM zone 30N / Instantaneous Water Level
depth,,,,
HC,1,3,0,CRS Number/EPSPG Code/Name/Source...,6, 5715,MSL depth,8.2,2013:05:14,EPSPG,Loaded from
EPSPG_v8_2.mdb
```

P1/11 Extraction Tool, by Tony Blackburn, 2015

ENTER one P1/11 (v1.1) record below:

```
HC,1,3,0,CRS Number/EPSPG Code/Name/Source...,1, 4326,WGS 84,8.2,2013:05:14,EPSPG,Loaded from EPSPG_v8_2.mdb
```

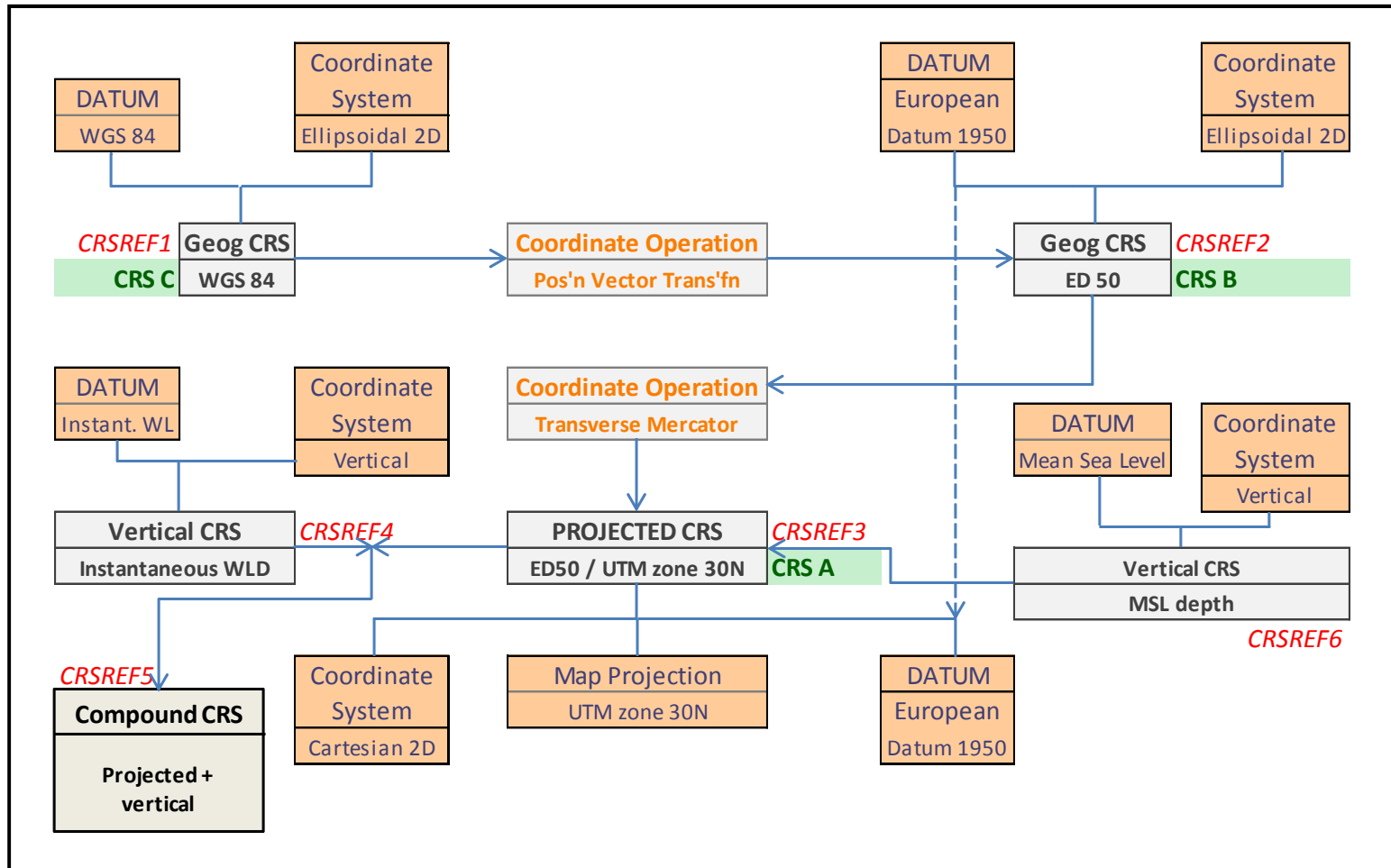
Common Header record

Header: HC,1,3,0

Record contents: Coordinate Reference System Implicit Identification

FIELD NUMBER	FIELD CONTENTS	VALUE
5	"CRS Number/EPSPG Code/Name/Source"	CRS Number/EPSPG Code/Name/Source...
6	CRS Number	1
7	EPSPG CRS Code	4326
8	CRS Name	WGS 84
9	Version of EPSPG-compliant database referenced	8.2
10	Date of EPSPG-compliant database referenced	2013:05:14
11	Source of EPSPG-compliant database referenced	EPSPG
12	Any Other Details	Loaded from EPSPG_v8_2.mdb

Coordinate Reference Systems Relationships



Full explicit definition is contained in records HC,1,4,0 through HC,1,8,4

```

OGP,OGP P1,1,1,1,2014:06:04,15:14:43,Test_File.p11,IOPG Geomatics
HC,0,1,0,Project Name ,Test File P1/11 v1.1,Example 4D,2014:05:12,
CC,0,2,0,Survey Description ,4D Towed Streamer,1 vessel 2 sources 11 streamers,North Sea,826,GBR
CC,1,0,0,LINE-DIRECTION = 331.255
CC,1,0,0,DEPTH DATA UNCORRECTED FOR SPEED OF SOUND IN WATER
CC,1,0,0,DEPTH DATA CORRECTED FOR DRAFT -6.39
CC,1,0,0,DEPTH DATA UNCORRECTED FOR TIDE
CC,1,0,0,RECEIVER DEPTHS CALCULATED BY INTERPOLATION FROM BIRD DEPTHS
HC,0,3,0,Geographic Extent ,1,31,4.89,55.82,57.81
HC,0,4,0,Client ,IOGP Geomatics
HC,0,5,0,Geophysical Contractor ,SEISMIC CO
HC,0,6,0,Positioning Contractor ,SEISMIC POSITIONING CO
HC,0,7,0,Position Processing Contractor ,SEISMIC POSITIONING CO
HC,1,0,0,Reference Systems Summary ,14,2,5,1
HC,1,1,0,Unit of Measure ,1, metre, length, 2, , , , SI base unit of length,9001,EPSG Dataset ,8.3,9001
HC,1,1,0,Unit of Measure ,2, radian, angle, 2, , , , SI angular measure unit,9101,EPSG Dataset ,8.3,9101
HC,1,1,0,Unit of Measure ,3, degree, angle, 2, 2,0,3.141592654, 180,0, Measure of plane angle,9102,EPSG Dataset ,8.3,9102
HC,1,1,0,Unit of Measure ,4, unity, scale, 2, , , , For unitless entities,9201,EPSG Dataset ,8.3,9201
HC,1,1,0,Unit of Measure ,5, second, time, 2, , , , SI base unit of time, ,POSC UOM Dictionary,2,2,s
HC,1,1,0,Unit of Measure ,6, millisecond, time, 2, 5,0, 0.001, 1,0, 1/1000 of a second, ,POSC UOM Dictionary,2,2,ms
HC,1,1,0,Unit of Measure ,7, second, time,11, , , , SI base unit of time, ,POSC UOM Dictionary,2,2,s
HC,1,1,0,Unit of Measure ,8, arc-second, angle, 2, 2,0,3.141592654, 648000,0, 1/3600 of a degree,9104,EPSG Dataset ,8.3,9104
HC,1,1,0,Unit of Measure ,9, Hertz, frequency, 2, , , , SI base unit of frequency, ,POSC UOM Dictionary,2,2,Hz
HC,1,1,0,Unit of Measure ,10, cubic metre, volume, 2, , , , metric volume, ,POSC UOM Dictionary,2,2,m3
HC,1,1,0,Unit of Measure ,11, cubic inch, volume, 2,10,0,0.000016387, 1,0, US cubic volume, ,POSC UOM Dictionary,2,2,cu_in
HC,1,1,0,Unit of Measure ,12, euclid, dimensionless, 2, , , , dimensionless base value, ,POSC UOM Dictionary,2,2,Euc
HC,1,1,0,Unit of Measure ,13, percent, fraction, 2,12,0, 0.01, 1,0, 0.01 of unity, ,POSC UOM Dictionary,2,2,%
HC,1,1,0,Unit of Measure ,14,parts per million,scale difference, 2, 4,0, 1,1000000,0, parts per million,9202,EPSG Dataset ,8.3,9202
HC,1,1,1,Example Unit Conversion ,1, 2,3.14159265358979323846, 3, 180
HC,1,1,1,Example Unit Conversion ,2, 2,3.14159265358979323846, 8,648000
HC,1,1,1,Example Unit Conversion ,3,10, 1.638706,11,100000
HC,1,1,1,Example Unit Conversion ,4,12, 0.1,13, 10
HC,1,1,1,Example Unit Conversion ,5,4, 0.000001,14, 1
HC,1,2,0,Time Reference System ,1,1, 0.0,UTC,0, ,7
HC,1,2,0,Time Reference System ,2,2,16.0,GPS,1,1980:01:06,5
HC,1,2,1,Example Time Conversion ,1,1,2014:05:12:13:00:00,2,1083934816.0
HC,1,3,0,CRS Number/EPSG Code/Name/Source ,1, 4326,WGS 84 ,8.3,2013:11:29,EPSG,Loaded from EPSG_v8_3.mdb
HC,1,3,0,CRS Number/EPSG Code/Name/Source ,2, 4230,ED50 ,8.3,2013:11:29,EPSG,Loaded from EPSG_v8_3.mdb
HC,1,3,0,CRS Number/EPSG Code/Name/Source ,3,23031,ED50 / UTM zone 31N ,8.3,2013:11:29,EPSG,Loaded from EPSG_v8_3.mdb
HC,1,3,0,CRS Number/EPSG Code/Name/Source ,4, 5831,Instantaneous water Level depth ,8.3,2013:11:29,EPSG,Loaded from EPSG_v8_3.mdb
HC,1,3,0,CRS Number/EPSG Code/Name/Source ,5, ,ED50 / UTM zone 31N / Instantaneous water Level depth, , , ,
HC,1,4,0,CRS Number/EPSG Code/Type/Name ,1,4326,2,geographic 2D,WGS 84
HC,1,4,4,Geodetic Datum ,1,6326,World Geodetic System 1984,1984:01:01
HC,1,4,5,Prime Meridian ,1,8901,Greenwich,0,3,degree
HC,1,4,6,Ellipsoid ,1,7030,WGS 84,6378137,1,metre,298.257223563
HC,1,6,0,Coordinate System ,1,6422,Ellipsoidal 2D CS. Axes\u003A latitude\u002C longitude. Orientations\u003A north\u002C east. UoM\u003A degree,3,Ellipsoidal,2
HC,1,6,1,Coordinate System Axis 1 ,1,1,106, Geodetic latitude,north, Lat,3,degree
HC,1,6,1,Coordinate System Axis 2 ,1,2,107,Geodetic longitude, east,Long,3,degree
HC,1,4,0,CRS Number/EPSG Code/Type/Name ,2,4230,2,geographic 2D,ED50
HC,1,4,4,Geodetic Datum ,2,6230,European Datum 1950,1950:01:01
HC,1,4,5,Prime Meridian ,2,8901,Greenwich,0,3,degree
HC,1,4,6,Ellipsoid ,2,7022,International 1924,6378388,1,metre,297
HC,1,6,0,Coordinate System ,2,6422,Ellipsoidal 2D CS. Axes\u003A latitude\u002C longitude. Orientations\u003A north\u002C east. UoM\u003A degree,3,Ellipsoidal,2
HC,1,6,1,Coordinate System Axis 1 ,2,1,106, Geodetic latitude,north, Lat,3,degree
HC,1,6,1,Coordinate System Axis 2 ,2,2,107,Geodetic longitude, east,Long,3,degree
HC,1,4,0,CRS Number/EPSG Code/Type/Name ,3,23031,1,projected,ED50 / UTM zone 31N
HC,1,4,3,Base Geographic CRS ,3,2,4230,ED50
HC,1,4,4,Geodetic Datum ,3,6230,European Datum 1950,1950:01:01
HC,1,4,5,Prime Meridian ,3,8901,Greenwich,0,3,degree
HC,1,4,6,Ellipsoid ,3,7022,International 1924,6378388,1,metre,297
HC,1,5,0,Map Projection ,3,16031,UTM zone 31N
HC,1,5,1,Projection Method ,3,9807,Transverse Mercator,5
HC,1,5,2,Latitude of natural origin ,3,8801, 0,3,degree
HC,1,5,2,Longitude of natural origin ,3,8802, 3,3,degree
HC,1,5,2,Scale factor at natural origin ,3,8805,0.9996,4,unity
HC,1,5,2,False easting ,3,8806,500000,1,metre
HC,1,5,2,False northing ,3,8807, 0,1,metre
HC,1,6,0,Coordinate System ,3,4400,Cartesian 2D CS. Axes\u003A easting\u002C northing (E\u002CN). Orientations\u003A east\u002C north. UoM\u003A m.,2,Cartesian,2
HC,1,6,1,Coordinate System Axis 1 ,3,1,1, Easting, east,E,1,metre
HC,1,6,1,Coordinate System Axis 2 ,3,2,2, Northing,north,N,1,metre
HC,1,4,0,CRS Number/EPSG Code/Type/Name ,4,5831,5,vertical,Instantaneous water Level depth
HC,1,4,7,Vertical Datum ,4,5113,Instantaneous water Level
HC,1,6,0,Coordinate System ,4,6498,Vertical CS. Axis\u003A depth (D). Orientation\u003A down. UoM\u003A m.,5,Vertical,1
HC,1,6,1,Coordinate System Axis 1 ,4,1,113,Depth,down,D,1,metre
HC,1,4,0,CRS Number/EPSG Code/Type/Name ,5,7,compound,ED50 / UTM zone 31N / Instantaneous water Level depth
HC,1,4,1,Compound Horizontal CRS ,5,3,23031,ED50 / UTM zone 31N
HC,1,4,2,Compound Vertical CRS ,5,4,5831,Instantaneous water Level depth
HC,1,7,0,Transformation Number/EPSG Code/Name/Source ,1,1311,ED50 to WGS 84 (18),8.3,2013:11:29,EPSG,Loaded from EPSG_v8_3.mdb
HC,1,8,0,Transformation Number/EPSG Code/Name ,1,1311,ED50 to WGS 84 (18),1
HC,1,8,1,Source CRS/Target CRS/Version ,1,2,4230,ED50,1,4326,WGS 84,UK00A-co
HC,1,8,2,Transformation Method ,1,9606,Position Vector transformation (geog2D domain),1,7
HC,1,8,4,X-axis translation ,1,8605, -89.5, 1, metre,1
HC,1,8,4,Y-axis translation ,1,8606, -93.8, 1, metre,1
HC,1,8,4,Z-axis translation ,1,8607,-123.1, 1, metre,1
HC,1,8,4,X-axis rotation ,1,8608, 0, 8, arc-second,1
HC,1,8,4,Y-axis rotation ,1,8609, 0, 8, arc-second,1
HC,1,8,4,Z-axis rotation ,1,8610,-0.156, 8, arc-second,1

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For info
only. Not
reviewed
in detail.

Survey Details, Units of Measure used, Geodesy and
Transformation used, including EPSG codes

Continued...

Streamer, Gun Array, Gun String, Tailbuoy, Front float, Gun string float Offsets

E/S Offset & QC elements

HC,1,8,4,Scale difference
HC,1,9,0,Example Point Conversion
HC,2,0,0,Survey Configuration
HC,2,1,0,SeisNAV
HC,2,1,0,SeisACQ
CC,1,0,0,This file contains regularized data
HC,2,2,0,Marine digital receiver
HC,2,3,0,Oil Explorer
HC,2,3,0,Streamer S1
HC,2,3,0,Streamer S2
HC,2,3,0,Streamer S3
HC,2,3,0,Streamer S4
HC,2,3,0,Streamer S5
HC,2,3,0,Streamer S6
HC,2,3,0,Streamer S7
HC,2,3,0,Streamer S8
HC,2,3,0,Streamer S9
HC,2,3,0,Streamer S10
HC,2,3,0,Streamer S11
HC,2,3,0,Gun Array G1
HC,2,3,1,Air Volume
HC,2,3,1,Number of Sub Arrays
HC,2,3,0,Gun Array G2
HC,2,3,1,Air Volume
HC,2,3,1,Number of Sub Arrays
HC,2,3,0,Gun String GS1
HC,2,3,1,Air Volume
HC,2,3,0,Gun String GS2
HC,2,3,1,Air Volume
HC,2,3,0,Gun String GS3
HC,2,3,1,Air Volume
HC,2,3,0,Gun String GS4
HC,2,3,1,Air Volume
HC,2,3,0,Gun String GS5
HC,2,3,1,Air Volume
HC,2,3,0,Gun String GS6
HC,2,3,1,Air Volume
HC,2,3,0,Front Float FF1
HC,2,3,0,Tailbuoy on S1
HC,2,3,0,Front Float FF2
HC,2,3,0,Tailbuoy on S2
HC,2,3,0,Front Float FF3
HC,2,3,0,Tailbuoy on S3
HC,2,3,0,Front Float FF4
HC,2,3,0,Tailbuoy on S4
HC,2,3,0,Tailbuoy on S5
HC,2,3,0,Tailbuoy on S6
HC,2,3,0,Tailbuoy on S7
HC,2,3,0,Front Float FF8
HC,2,3,0,Tailbuoy on S8
HC,2,3,0,Front Float FF9
HC,2,3,0,Tailbuoy on S9
HC,2,3,0,Front Float FF10
HC,2,3,0,Tailbuoy on S10
HC,2,3,0,Front Float FF11
HC,2,3,0,Tailbuoy on S11
HC,2,3,0,Gun String Float F1 on Gun String GS1
HC,2,3,0,Gun String Float F2 on Gun String GS1
HC,2,3,0,Gun String Float F1 on Gun String GS2
HC,2,3,0,Gun String Float F2 on Gun String GS2
HC,2,3,0,Gun String Float F1 on Gun String GS3
HC,2,3,0,Gun String Float F2 on Gun String GS3
HC,2,3,0,Gun String Float F1 on Gun String GS4
HC,2,3,0,Gun String Float F2 on Gun String GS4
HC,2,3,0,Gun String Float F1 on Gun String GS5
HC,2,3,0,Gun String Float F2 on Gun String GS5
HC,2,3,0,Gun String Float F1 on Gun String GS6
HC,2,3,0,Gun String Float F2 on Gun String GS6
HC,2,3,0,Echo Sounder ES1 on OEX
H1,0,0,0,File Contents Description
H1,0,1,0,Processing Details
H1,0,2,0,Level of significance
H1,0,2,0,Detection power
H1,0,2,0,Critical value w-test
H1,0,2,0,Scale factor 95% error ellipse (2D)
H1,1,0,0,Position Record Type Definition
H1,1,0,0,Position Record Type Definition
H1,1,0,1,Position Record Quality Definition
H1,1,0,1,Position Record Quality Definition
H1,2,0,0,Receiver Record Type Definition
H1,2,0,1,Receiver Record Quality Definition
H1,4,0,0,Preplot Record Type Definition
S1,0,1462P1A001,1462P1,2147,2147,1,1083914678.96,13,G01,1,,
P1,0,1462P1A001,1462P1,2147,2147,1,1083914679,1, OEX,2,,
P1,0,1462P1A001,1462P1,2147,2147,1,1083914679,52,OEX,ES1,2,,
P1,0,1462P1A001,1462P1,2147,2147,1,1083914679,13, G01,1,,
P1,0,1462P1A001,1462P1,2147,2147,1,1083914679,14, G02,1,,
1,8611, 1.2,14,parts per million,1
1,STN 1,1,56.96487917,2.98566556,,2,56.96552331,2.98717214,,3,499219.98,6313689.59,
2,1,52,1,metre
1,Navigation,1,4.0,2014:01:01
2, Recording,1,5.0,2012:01:01
53,Rx1,SRH 16,SEG
1,OEX,1, Vessel,,1&2,, 0, 0,Vessel Reference Point,14,7, 23
2,S01,2,Streamer,, 1, 250,-600,-8, Centre First Group, 2, ,109
3,S02,2,Streamer,, 1, 200,-600,-8, Centre First Group, 2, ,109
4,S03,2,Streamer,, 1, 150,-600,-8, Centre First Group, 2, ,109
5,S04,2,Streamer,, 1, 100,-600,-8, Centre First Group, 2, ,109
6,S05,2,Streamer,, 1, 50,-600,-8, Centre First Group, 1, ,104
7,S06,2,Streamer,, 1, 0,-600,-8, Centre First Group, 1, ,104
8,S07,2,Streamer,, 1, -50,-600,-8, Centre First Group, 1, ,104
9,S08,2,Streamer,, 1,-100,-600,-8, Centre First Group, 2, ,109
10,S09,2,Streamer,, 1,-150,-600,-8, Centre First Group, 2, ,109
11,S10,2,Streamer,, 1,-200,-600,-8, Centre First Group, 2, ,109
12,S11,2,Streamer,, 1,-250,-600,-8, Centre First Group, 2, ,109
13,G01,4,Air Gun Array,,1, 25,-410,-6,Centre of Source,3,,1
13,4,987,11,cubic inch
13,30,3,12,euclid
14,G02,4,Air Gun Array,,1,-25,-410,-6,Centre of Source,3,,1
14,4,987,11,cubic inch
14,30,3,12,euclid
15,GS01,9,Gun String,,13, 8,7.5,0,Centre of First Gun Cluster,2,,6
15,4,329,11,cubic inch
16,GS02,9,Gun String,,13, 0,7.5,0,Centre of First Gun Cluster,2,,6
16,4,329,11,cubic inch
17,GS03,9,Gun String,,13,-8,7.5,0,Centre of First Gun Cluster,2,,6
17,4,329,11,cubic inch
18,GS04,9,Gun String,,14, 8,7.5,0,Centre of First Gun Cluster,2,,6
18,4,329,11,cubic inch
19,GS05,9,Gun String,,14, 0,7.5,0,Centre of First Gun Cluster,2,,6
19,4,329,11,cubic inch
20,GS06,9,Gun String,,14,-8,7.5,0,Centre of First Gun Cluster,2,,6
20,4,329,11,cubic inch
21,FF01,10,Float,, 2,0, 68.46,8,Float Reference Point,,3
22, F01,10,Float,, 2,0,-4205.14,8,Float Reference Point,,3
23,FF02,10,Float,, 3,0, 43.64,8,Float Reference Point,,3
24, F02,10,Float,, 3,0,-4205.14,8,Float Reference Point,,3
25,FF03,10,Float,, 4,0, 43.58,8,Float Reference Point,,3
26, F03,10,Float,, 4,0,-4205.14,8,Float Reference Point,,3
27,FF04,10,Float,, 5,0, 41.34,8,Float Reference Point,,3
28, F04,10,Float,, 5,0, -4205.2,8,Float Reference Point,,3
29, F05,10,Float,, 6,0,-4205.14,8,Float Reference Point,,3
30, F06,10,Float,, 7,0, -4205.2,8,Float Reference Point,,3
31, F07,10,Float,, 8,0,-4205.14,8,Float Reference Point,,3
32,FF08,10,Float,, 9,0, 41.28,8,Float Reference Point,,3
33, F08,10,Float,, 9,0,-4205.14,8,Float Reference Point,,3
34,FF09,10,Float,,10,0, 43.58,8,Float Reference Point,,3
35, F09,10,Float,,10,0,-4205.26,8,Float Reference Point,,3
36,FF10,10,Float,,11,0, 43.64,8,Float Reference Point,,3
37, F10,10,Float,,11,0,-4205.14,8,Float Reference Point,,3
38,FF11,10,Float,,12,0, 68.46,8,Float Reference Point,,3
39, F11,10,Float,,12,0,-4205.14,8,Float Reference Point,,3
40,GS01F01,10,Float,,15,0,-6.6,Float Reference Point,,3
41,GS01F02,10,Float,,15,0,-15.6,Float Reference Point,,3
42,GS02F01,10,Float,,16,0,-6.6,Float Reference Point,,3
43,GS02F02,10,Float,,16,0,-15.6,Float Reference Point,,3
44,GS03F01,10,Float,,17,0,-6.6,Float Reference Point,,3
45,GS03F02,10,Float,,17,0,-15.6,Float Reference Point,,3
46,GS04F01,10,Float,,18,0,-6.6,Float Reference Point,,3
47,GS04F02,10,Float,,18,0,-15.6,Float Reference Point,,3
48,GS05F01,10,Float,,19,0,-6.6,Float Reference Point,,3
49,GS05F02,10,Float,,19,0,-15.6,Float Reference Point,,3
50,GS06F01,10,Float,,20,0,-6.6,Float Reference Point,,3
51,GS06F02,10,Float,,20,0,-15.6,Float Reference Point,,3
52,OEX,ES1,11,Echo Sounder,Simrad EA600,,1,-1.65,-14.45,-7.29,Transducer Position,,
Final Positions. Output by SeisNAV,
onboard Positioning Processing by SeisNAV
3, 1,13,percent
4,90,13,percent
5,2.576,12,euclid
6,2.448,12,euclid
1,3,2,1,2,1,0,
2,3,2,1,2,1,1,1,4;Water Depth;1
1,95,Absolute Error Ellipses,1,3,0,
2,95,Absolute Error Ellipses,1,3,0,
1,328,5,2,1,2,1,1,0,
1,95,Relative Error Ellipse,1,3,0,
1,13, 4,4D Survey,3,2,1,1,1,0,
508747.78,6308764.99, 56.92120266,3.1436908, 56.92055876,3.14219019,,2.09,1.56,90.84,,
508523.33,6309110.89, 56.9243142,3.14001572, 56.92367037, 3.1385149,,1.61,1.61, 61.22,,68.26
508528.74, 6309097.4, 56.92419285,3.14010415, 56.92354902,3.13860333,,1.61,1.61, 61.22,,68.26
508747.78,6308764.99, 56.92120266, 3.1436908, 56.92055876,3.14219019,,2.09,1.56, 90.84,,
508702.47,6308739.71, 56.92097641,3.14294563, 56.92033249,3.14144502,,2.09,1.59, 87.2,,

Common Header: Survey Configuration example - 3D Marine Survey

HC,2,3,0,Seismic Vessel	, 1,SVL,1,Vessel,,1&2,,0,0,0,Vessel Reference Point,15,7,23
HC,2,3,0,Streamer S1	, 2,S01,2,Streamer,,,1, 150,-633,-8,Centre First Group,2,, 84
HC,2,3,0,Streamer S2	, 3,S02,2,Streamer,,,1, 112.5,-633,-8,Centre First Group,2,, 85
HC,2,3,0,Streamer S3	, 4,S03,2,Streamer,,,1, 37.5,-633,-8,Centre First Group,2,, 91
HC,2,3,0,Streamer S4	, 5,S04,2,Streamer,,,1, -37.5,-633,-8,Centre First Group,1,,106
HC,2,3,0,Streamer S5	, 6,S05,2,Streamer,,,1,-112.5,-633,-8,Centre First Group,1,, 79
HC,2,3,0,Streamer S6	, 7,S06,2,Streamer,,,1, -150,-633,-8,Centre First Group,1,, 80
HC,2,3,0,Gun Array G1	,14,G01,4,Air Gun Array,,,1, 18.75,-458,-7,Centre of Source,3,,1
HC,2,3,1,Number of Sub Arrays	,14,30,2,12,euclid
HC,2,3,0,Gun Array G2	,15,G02,4,Air Gun Array,,,1,-18.75,-458,-7,Centre of Source,3,,1
HC,2,3,1,Number of Sub Arrays	,15,30,2,12,euclid
HC,2,3,0,Gun String GS1	,16,GS01,9,Gun String,,,14, 4,7.5,0,Centre of First Gun Cluster,2,,
HC,2,3,0,Gun String GS2	,17,GS02,9,Gun String,,,14,-4,7.5,0,Centre of First Gun Cluster,2,,
HC,2,3,0,Gun String GS4	,19,GS04,9,Gun String,,,15, 4,7.5,0,Centre of First Gun Cluster,2,,
HC,2,3,0,Gun String GS5	,20,GS05,9,Gun String,,,15,-4,7.5,0,Centre of First Gun Cluster,2,,
HC,2,3,0,Tailbuoy on S1	,23,F01,10,Float,,, 2,0,-3100.0,8,Float Reference Point,,,3
HC,2,3,0,Tailbuoy on S2	,25,F02,10,Float,,, 3,0,-3100.0,8,Float Reference Point,,,3
HC,2,3,0,Tailbuoy on S3	,27,F03,10,Float,,, 4,0,-3100.0,8,Float Reference Point,,,3
HC,2,3,0,Tailbuoy on S4	,28,F04,10,Float,,, 5,0,-3100.0,8,Float Reference Point,,,3
HC,2,3,0,Tailbuoy on S5	,29,F05,10,Float,,, 6,0,-3100.0,8,Float Reference Point,,,3
HC,2,3,0,Tailbuoy on S6	,30,F06,10,Float,,, 7,0,-3100.0,8,Float Reference Point,,,3
HC,2,3,0,Front Float FF2	,24,FF02,10,Float,,,3,0, 68.5,8,Float Reference Point,,,3
HC,2,3,0,Front Float FF5	,36,FF05,10,Float,,,6,0, 68.5,8,Float Reference Point,,,3
HC,2,3,0,Gun String Float F1 on Gun String GS1	,40,GS01F01,10,Float,,,16,0, -6,7,Float Reference Point,,,3
HC,2,3,0,Gun String Float F2 on Gun String GS1	,41,GS01F02,10,Float,,,16,0,-15,7,Float Reference Point,,,3
HC,2,3,0,Gun String Float F1 on Gun String GS2	,42,GS02F01,10,Float,,,17,0, -6,7,Float Reference Point,,,3
HC,2,3,0,Gun String Float F2 on Gun String GS2	,43,GS02F02,10,Float,,,17,0,-15,7,Float Reference Point,,,3
HC,2,3,0,Gun String Float F1 on Gun String GS4	,46,GS04F01,10,Float,,,19,0, -6,7,Float Reference Point,,,3
HC,2,3,0,Gun String Float F2 on Gun String GS4	,47,GS04F02,10,Float,,,19,0,-15,7,Float Reference Point,,,3
HC,2,3,0,Gun String Float F1 on Gun String GS5	,48,GS05F01,10,Float,,,20,0, -6,7,Float Reference Point,,,3
HC,2,3,0,Gun String Float F2 on Gun String GS5	,49,GS05F02,10,Float,,,20,0,-15,7,Float Reference Point,,,3
HC,2,3,0,Echo Sounder ES1 on SVL	,52,SVL.ES1,11,Echo Sounder,,,1,-1.62,-14.97,-7.28,Transducer Position,,,
HC,2,3,0,Gun Array Mean	,54,GAM,12,Mid Point,,,14&15,0,-458,-7,,,,

HC,2,3,0 Record Interpretation

P1/11 Extraction Tool, by Tony Blackburn, 2015

ENTER one P1/11 (v1.1) record below:

HC,2,3,0,Streamer S1, 2,S01,2,Streamer,,,1, 150,-633,-8,Centre First Group,2,, 84

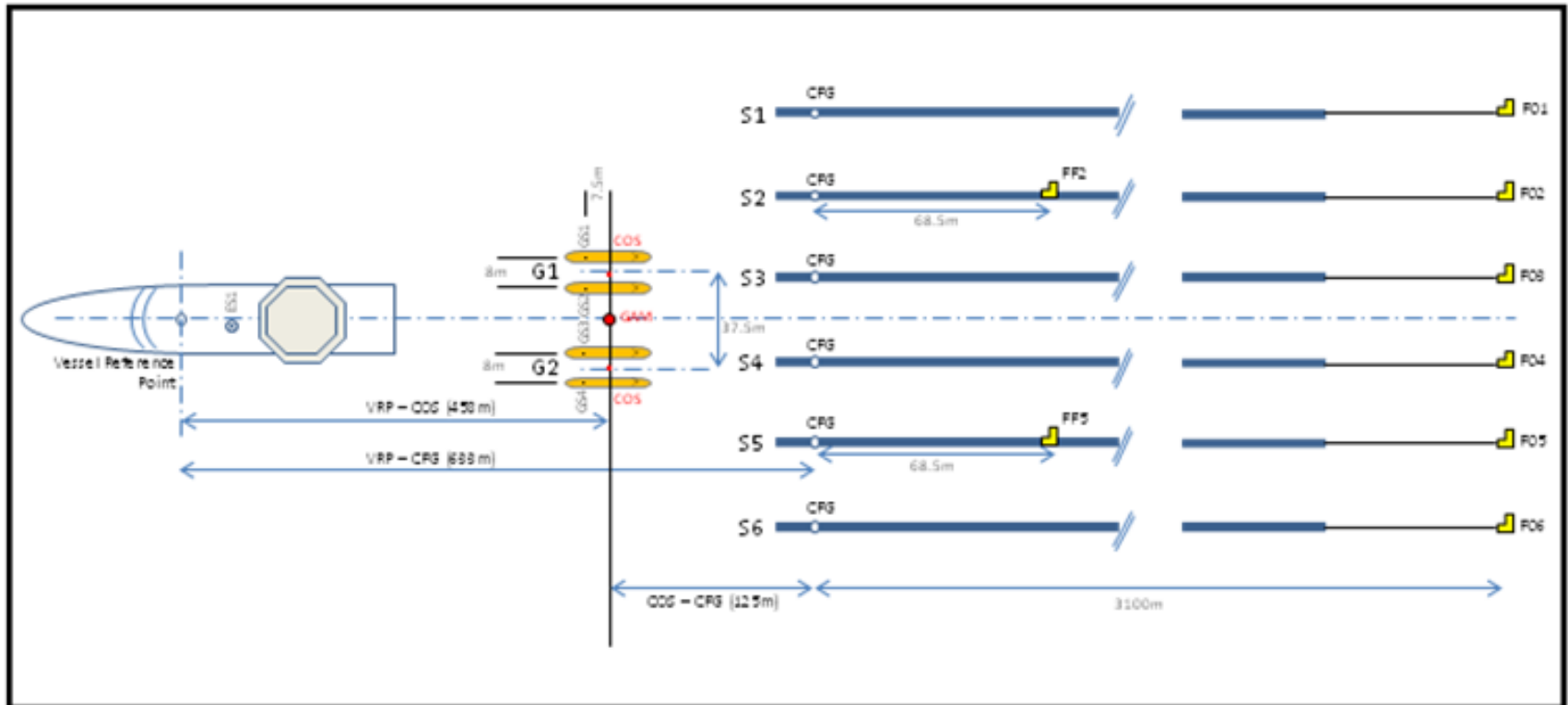
Common Header record

Header: HC,2,3,0

Record contents: Object Summary Information

FIELD NUMBER	FIELD CONTENTS	VALUE
5	Object Full Name	Streamer S1
6	Object Reference Number	2
7	Object Short Name	S01
8	Object Type Reference Code	2
9	Object Type	Streamer
10	Object Model Details	
11	Systems On This Object	
12	"Towed By" Object Ref. Number(s)	1
13	Across Offset	150
14	Along Offset	-633
15	Above Offset	-8
16	Description of Local Reference Point	Centre First Group
17	Number of Objects Towed By this Object	2
18	Number of External Position Sensors	
19	Number of Nodes	84

Survey Configuration example



Towed streamer spread constructed from P1/11 Common Header

Adaptable to any environment



Applicable to many types of survey

- Seismic
 - 2D
 - 3D
 - 4D
 - Multiple component
 - EMGS
- Geophysical surveys
 - Marine site & route surveys
 - Seabed clearance surveys
 - Hydrographic surveys

Other uses of P1/11

- To exchange pre-plot data
- To define survey outlines and perimeters
- To record relational data – P1/11 can replace SEG's SPS format

Collaboration with SEG

- The latest version of SEG-D (field tape format) supports the Common Header CRS definition
- The next version of SEG-Y (processed data format) will support the Common Header CRS definition
- IOGP Geomatics Committee and SEG TSC are collaborating on the next version of SPS

IOGP Library and Contact details

Download the Documents from www.iogp.org or via direct links below:

<http://www.iogp.org/pubs/483-1.pdf> (P1/11 Format Specification)

<http://www.iogp.org/pubs/483-1u.pdf> (P1/11 User Guide)

<http://www.iogp.org/pubs/483-2.pdf> (P2/11 Format Specification)

<http://www.iogp.org/pubs/483-6.pdf> (P6/11 Format Specification)

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