WinFrog Device Group:	OUTPUT
Device Name/Model:	Dynamic Target
Device Manufacturer:	
Device Data String(s) Output to WinFrog:	None
WinFrog Data String(s) Output to Device:	Four different proprietary formats are available: 1) NMEA ASCII 2) PUGS/LMRP 3) STARS 4) Seatrack See below for telegram description
WinFrog Data Item(s) and their RAW record:	No data is recorded in the RAW files

DEVICE DESCRIPTION:
This device outputs the distance and bearing between selected vehicles in one of four different formats.

DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:
Serial
Configurable Parameters

WINFROG I/O DEVICES > CONFIGURE DEVICE:
This device must be configured at the I/O Device window level. In the I/O Devices window, click the device name to select it, then right-click and select Configure Device. The CONFIGURE OUTPUT SETTINGS dialog box appears, as seen below.

The above dialog allows you to select the required data format and units, as well as which vehicles are to be used to determine the range and bearing between.

Formats General

NMEA ASCII, PUGS/LMRP, STARS and Seatrack
The first three formats (NMEA ASCII, PUGS/LMRP and STARS) only allow for one vehicle pair and no ID. The "On" checkbox does not stop output of the data, but must be set. Select the desired vehicles, time interval for output of the data in milliseconds and the format. The forth format (Seatrack) places the ID (if present) in the telegram. The "On" checkbox must be checked for data to be output in the Seatrack format. Before data will be output for any format, the DATA OUTPUT data item must be added to each selected vehicle. **If a vehicle is deleted or renamed and it was selected as one the target or master vehicles, this dialog must be edited to reflect the change**.

Formats Specific

NMEA ASCII
This format is in the NMEA style and is not an approved NMEA sentence. The telegram output is

$WFBAR,hhmmss.ss,
yyyyy,yy,Y,mmmmm.mm,M,aaa.a,T,vehcicle1,vehicle2*hh<CR><LF>
Where:

	Capital letters appear in the telegram.
hhmmss.ss	Time
yyyyy.yy	Distance between the two vehicles' currently selected reference positions in yards.
mmmmm.mm	Distance between the two vehicles' currently selected reference positions in metres.
Aaa.a	is the bearing relative the head of the master vehicle to the target vehicle.
vehicle1	Name of master vehicle.
vehicle2	Name of target vehicle.
hh	Check sum.

PUGS/LMRP
The ASCII telegram output is
$HSPUGS,hhmmss.ss,tete.tet,tntn.tnt,thth.tht,tat.t,ppp.p,rrr.r,meme.mem,mnmn.mnm,m
hmh.mhm,mam.a,xxx.x,yyy.y,zzz.z,hhh.h*hh<CR><LF>
Where:

	Capitals appear in the telegram.
hhmmss.ss	Time
tete.tet	Easting of the target's current reference point.
tntn.tnt	Northing of the target's current reference point.
thth.tht	Height of the target's current reference point.
tat.t	Grid heading of the target vehicle.
ppp.p	Pitch of the target vehicle.
rrr.r	Roll of the target vehicle.
meme.mem	Easting of the master's current reference point.
mnmn.mnm	Northing of the master's current reference point.
mhmh.mhm	Height of the master's current reference point.
mam.a	Grid heading of the master vehicle.
xxx.x	Distance starboard from master to target (port negative)
yyy.y	Distance foreword from master to target (aft negative)
zzz.z	Height target is above master.
hhh.h	Angle between the master's heading and the target's heading. These last four values are between the CRPs (common reference point) of the vehicles.
hh	Check sum.

STARS
This is a binary telegram of 5 bytes.
Byte
1   Distance (hundreds) in selected units (metres or yards).
2   Distance (tens and units) in selected units.
3   Hours
4   Minutes
5   Seconds
The distance is between the current reference points of each vehicle.

Example

Byte	Binary value	Decimal value	Result
1	00000110	6	600(m or yd)
2	00101110	46	46(m or yd)
3	00001100	12	12hours
4	00000101	5	5minutes
5	00101001	41	41seconds

Total distance, 646 meters or yards depending upon the operator's selection of units.

Seatrack
Select up to six pairs for data output. The data is only output if the checkbox is checked. If an ID is placed in the edit box it will be added to the telegram, otherwise nothing is placed in this location in the telegram.
The fixed length ASCII telegram output is

hhmmss.ssidrrrrr.raaa.aaa000.00505.0<CR><LF>
Where:

|	
hhmmss.ss	Time
id	Two character ID operator entered. Operator may enter 1 or no characters in which case one or no characters will be present in the telegram.
rrrrr.r	Range between the selected offset points (see below) in metres.
aaa.aaa	True azimuth between the selected offset points (see below) in metres.
00.505.0	Fixed characters in the telegram.

The last four items may be repeated up to six times, once for each target master pair.

WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM > EDIT:

Adding the Dynamic Target device creates the DATA OUTPUT data item. Once the data item has been added to the vehicle, it must be edited to suit the application.

Data item: OUTPUT, Dynamic Target, DATA OUTPUT

Attach this data item to each vehicle selected in the Configure Device section above. The telegram will not be output until all vehicles selected have this data item added to it. Only the Seatrack format allows selection of offset points. If the Seatrack format has been selected, then the following dialog will appear when edited:
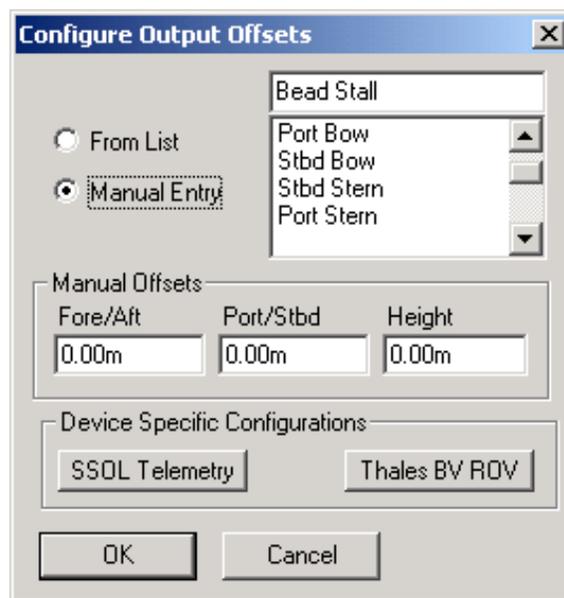
Normally, the point used on the vehicle for the computation is either the common reference position (CRP) or the currently selected reference position. If the coordinates of another point are desired, it may be selected from the "Offsets" list or entered manually. The SSOL Telemetry and Thales BV ROV buttons have no effect here.

TELGRAM SPECIFICATION:

See the Format Specific sections above.