

# Trials Recording & Analysis Package

## TRAP

The TRAP system provides a data logging and real-time graphical and numerical display for messages captured from a MIL-STD 1553 databus, an Ethernet LAN and up to four independent serial buses.



*TRAP – ruggedised laptop, junction box & interface cabling*

The system was commissioned by BAE Systems Surface Ships UK Ltd for use on the Sandown Class Single Role Mine-Hunter and Hunt Class Mine-Hunter to analyse the performance of the ship's navigational and weapon systems. However the generic nature of the TRAP system makes it suitable for any distributed system implemented on top of a MIL-STD 1553 bus, Ethernet LAN or a number of serial buses. The system captures specified messages from the data bus and decodes specified parameters into engineering units in real-time for storage in a database. Serial messages are simultaneously captured, decoded and stored in the same database.

The system is housed in a ruggedised laptop running the Microsoft Windows operating system with four serial RS232 interfaces, LAN interface and a MIL-STD1553 bus monitor interface. An external small portable colour printer is provided with the system. Battery or mains powered with automatic 240/115VAC switching. Cabling from the TRAP system to other systems can also be accommodated.



*Single Role Mine Hunter*

The following data capture facilities are offered:

- Simultaneous capture from MIL-STD 1553 bus, Ethernet LAN and up to four serial buses;
- User configuration of message selection and parameter decoding;
- Currently logs 17 different message types containing 166 parameters (expandable depending upon number of parameters and message frequency);
- Each message time stamped to one millisecond resolution;
- Parameters converted and stored in engineering units;
- Real-time calculations performed on data, e.g. WGS84 to local grid translation;
- All messages stored in a Paradox database (other database formats could be accommodated).
- Real-time export of data to external analysis system.

**mass**

a Cohort plc company

MASS is an independent systems house with a long defence pedigree. We have a proven track record in EW operational support, secure integrated networks, secure communication systems, test systems integration and the provision of managed services in critical defence operations.

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Message: MCN1012

TimeStamps	Ships Heading	Ships Log Speed	Wind Speed	Wind Direction	Time of Validity	Validity 1012
04/03/00 23:40:36	189.904174769205	0.20703125	18.125	21.25954492361	96897490	249
04/03/00 23:40:36	189.953613265772	0.20703125	18.1404375	0.977783203214	96897631	249
04/03/00 23:40:36	189.992065414213	0.20703125	18.5	11.107177735386	96897769	249
04/03/00 23:40:36	190.030517562654	0.20703125	18.953125	22.862548830206	96897910	249
04/03/00 23:40:36	190.046997054843	0.1953125	19.35546875	0.076904296882	96898049	249
04/03/00 23:40:36	190.057983382969	0.20703125	19.00390625	12.623291016774	96898187	249
04/03/00 23:40:36	190.068969711095	0.20703125	18.44821875	44.637451175938	96898328	249
04/03/00 23:40:36	190.079956039221	0.20703125	18.85234375	40.616455081822	96898465	249
04/03/00 23:40:37	190.090942367347	0.20703125	18.32421875	4.910888672322	96898619	249
04/03/00 23:40:37	190.101828695473	0.20703125	18.30078125	359.83520507811	96898744	249
04/03/00 23:40:37	190.118408187662	0.20703125	18.3515625	21.961669923874	96898884	249
04/03/00 23:40:37	190.15136717204	0.20703125	18.30078125	21.785888673858	96899034	249
04/03/00 23:40:37	190.17883292355	0.20703125	18.625	23.038330080222	96899164	249

Buttons: House, Close

Message Numerical Grid - showing detailed message contents

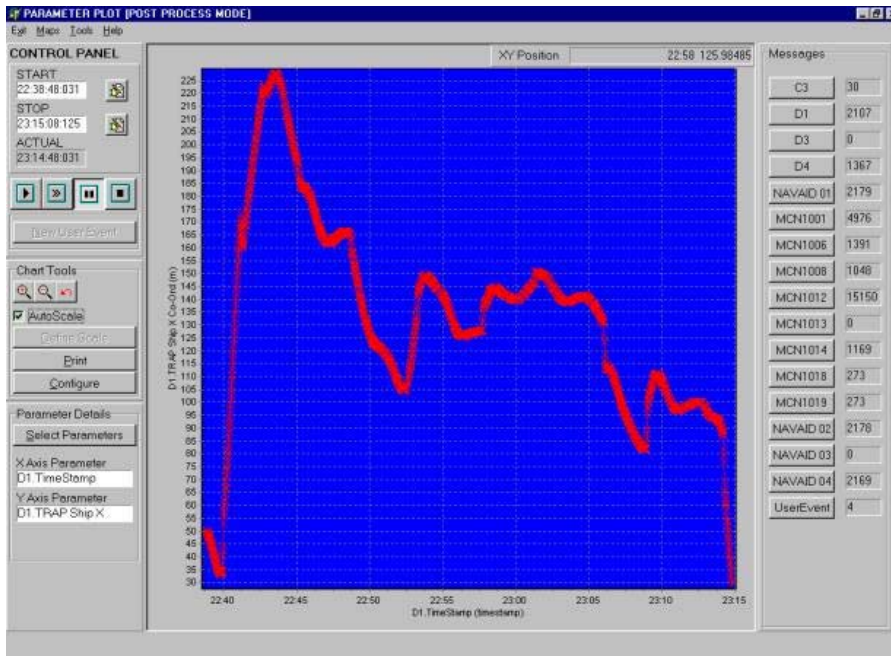
The system was designed to acquire data from a moving platform with various navigation aids. As positional messages enter the TRAP system, they are transposed from their geographical projection (WGS84) to an orthogonal local grid projection for real-time plotting. As well as real-time graphical displays the contents of any message can also be displayed in a numerical scrollable grid.

The following user interface facilities are offered:

- Recording control with display of start, stop and duration;
- Graphical plots of predefined or selected parameters;
- Automatic or manual scaling of plots;
- Numerical grid display of any user selected message;
- Entering and displaying of predefined waypoint positions;
- Status monitoring and error reporting facilities.

The following post processing facilities are offered:

- Replay control with selectable start and stop times and fast forward;
- Same Graphical/Numerical displays as in data capture;
- Colour print outs of graphical plots;
- Predefined post processing calculations performed on captured data, e.g. range, bearing, peak and RMS displacement errors;
- Export of selected data in predefined formats.



Parameter Plot – provides comparison of message parameters

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