

## UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND CERTIFICATE OF TYPE APPROVAL

**Applicant:-**  
Kelvin Hughes Ltd  
New North Road, Hainault  
Ilford, Essex, IG6 2UR  
United Kingdom

**Manufacturer:-**  
Kelvin Hughes Ltd  
New North Road, Hainault  
Ilford, Essex, IG6 2UR  
United Kingdom

This is to certify that the applicant has submitted details of a:-

### **Shipborne Voyage Data Recorder (VDR)**

Of a type known and designated as:-

### **NDR 2002 - Voyage Data Recorder System** (Comprising component parts as described in schedule attached)

and that this has been assessed and tested, and is CERTIFIED as complying with:-  
IEC 61996 : 2000, "Shipborne voyage data recorder (VDR)"  
and IEC 945:1996 "General Requirements for Marine Navigational Equipment"

(being Operational requirements - Methods of testing and test results, performance specification), published by the International Electrotechnical Commission and by the British Standards Institution as BS EN61996 :2000 and BS EN60945 :1997.

It is also CERTIFIED that the equipment conforms to performance standards not inferior to those adopted by the International Maritime Organisation, and which are contained in Resolution A861(20) and Resolution A694(17).

**SIGNED:**



**P J Goddard**

**Authorised Signatory**

**DATE:**

*5th March 2002*

**Certificate Number:**

**DERA-TAN-05/01-01R**

**This Certificate is Valid for 5 Years from Date shown**  
The conditions of issue of this certificate are printed on the attached schedule which forms an integral part of this certificate



QinetiQ  
Fraser Range  
Fort Cumberland Road, Eastney  
Portsmouth, Hampshire. PO4 9LJ

Maritime and Coastguard Agency  
The MCA is an Executive Agency of the Department  
of Transport, Local Government and the Regions

*The QinetiQ Group PLC (formerly known as DERA) is specified as a "person" under the terms of The Merchant Shipping (Delegation of Equipment Approval) Regulations 1996, and this certificate is issued under the authority given in Merchant Shipping Notice No MSN 1735..*

# Certificate of Type Approval - Schedule 1

## NDR 2002 Voyage Data Recorder Systems

The applicant declared that the following units when combined form an operational Marine Shipborne Voyage Data Recording system. The units below have been assessed & tested and satisfactory details of these units were included in the technical file. These units form systems consistent with the Item Description A2/4.14, given in Annex A2 of Directive 98/85/EC (the Marine Equipment Directive) .

MAIN UNITS Comprising:-

Data Acquisition Unit	VDR-A1	
Protective capsule	VDR-A5	*1, 2
Remote Status and Alarm Module	VDR-A9	*3
Interior Microphone Units	VDR-A6	*4
Exterior Microphone Units	VDR-A7	*4
Data Interface Unit	VDR-A4	*5

----- End of List -----

NOTES:-

1. The protective capsule is an OEM unit that can be supplied from either Smiths Group or from L3 Communications Inc. They have the suffixes "ABAA" or "ACAA" respectively.
2. The standard protective capsule is equipped with 1.5GB of memory, the Smiths Group capsule can also be supplied in a 4GB version in which case the suffix is "ABBA".
3. Optional if Data Acquisition Unit is easily accessible on Bridge.
4. Up to 12 microphones may be fitted, exterior unit is for external bridge wings.
5. Optional, multiple units may be fitted but each one will use 1, IEC 61162-1, serial data port in the Data Acquisition Unit.

### Technical Characteristics

PARAMETER	PROVISION	COMMENT
IEC 61162-1 SERIAL (NMEA) PORTS	<b>16</b>	Conformity to IEC 61162-1:2000. Designated ZDA & GGA/GLL message can be alarmed. Presence check on other messages
ANALOGUE SIGNAL PORTS	<b>Up to 16 per DIU fitted</b>	Provision made by inclusion of VDR-A4 external data interface unit for Voltage, Current and Closing-contact inputs. Can also take pulse log and Gyrocompass.
RADAR VIDEO PORT	<b>2</b>	RGB + H/V Sync or Composite Sync available, VESA DMTS standards to 1280 x 1024 at 85Hz are covered Presence check and alarm
BRIDGE AUDIO CHANNELS	<b>Up to 12 microphones</b>	Proprietary. 4 recording channels each of up to 3 microphones Acoustic integrity check every 12 hrs
RADIO COMMS AUDIO CHANNELS	<b>2</b>	Transmit & Receive inputs available on each channel. 600Ω/0dBm
FLOAT FREE	<b>No</b>	Protective capsules used is for fixed deck installation only.
RECORDING DURATION	<b>&gt;12 Hours</b>	Parallel recording onto removable Hard-Disk, Protective capsule memory may be downloaded to hard disk.
RESERVE POWER	<b>2 Hours</b>	From internal batteries. All functional inputs recorded during reserve power operation
TEMPERATURE RANGE Exposed & IEC 945 CLASS Protected	<b>-25°C to +70°C -15°C to +55°C.</b>	— Protective Capsules, Exterior Microphone Units — All other units
POWER SOURCE	<b>110/220V AC 24V DC</b>	Power supply input to VDR-A1 is AC only. VDR-A1-1 has AC & DC inputs automatically switched.

**Conditions of Issue of this certificate are printed the reverse of this sheet.**

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