



## SCANFISH INTELLIGENT UNDULATING REMOTELY OPERATED TOWED VEHICLES

- **Oceanographic research and surveys**
- **Hydrographic research and surveys**
- **Side scan sonar and magnetometer surveys**
- **Biological environmental surveys**
- **Fisheries research**
- **Environment impact studies**

The Scanfish ROTV is designed for collecting 3D profile data of the water column. As a platform for integration of multiple sensors it provides easy deployment and fast configuration of the sensor spread, which is variable depending on mission requirements. Due to the intelligent control system the ROTV can undulate following a saw tooth path securing even distribution of sensor data.



## SCANFISH SYSTEM

The Scanfish system comprises:

- **Scanfish ROTV**
- **Deck unit**
- **Tow cable and winch with cable counter**
- **Flight control and monitoring software**

Scanfish allows for operation in three different modes: undulation mode, fixed depth mode or fixed height (terrain following) mode. The system is easily deployed and the Scanfish ROTV undulates up to 150m without active use of the winch. Undulation up to 400m are achieved by the use of EIVA's own ScanWinch, which allows for automatic control of cable heave-in/pay-out. Due to its unique performance, the ScanFish system offers the lowest cost per data set obtained by an ROTV.

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Features and benefits comprise among others:

- **Highly stable sensor platform**
- **Optimal hydrodynamic vehicle design**
- **Rugged, light-weight system**
- **Low acoustic and magnetic signature**
- **Computer controlled vehicle flaps**
- **Intelligent seabed collision avoidance**
- **Automatic winch control**
- **Minimum stress on tow cable (no fairing required)**
- **Accommodates a wide range of sensors**
- **Data collection on-the-fly**
- **Flight client/server based software**

The vehicle control system features:

- **Feedback for individual flap control**
- **Roll and pitch sensors**
- **Pressure sensor for depth control**
- **Acoustic altimeter for bottom collision avoidance and auto-altitude control**
- **Feedback control for horizontal fly position**
- **Up and down sensor for upright self-turning mode**
- **Internal emergency battery back-up**

An optional ADSL junction box enables faster data transmission over the tow-cable connection.



Teglbaekvej 8-10  
DK-8361 Hasselager  
Denmark  
Phone +45 8628 2011  
Fax +45 8628 2111  
eiva@eiva.dk · www.eiva.dk

Optional sensors comprise among others:

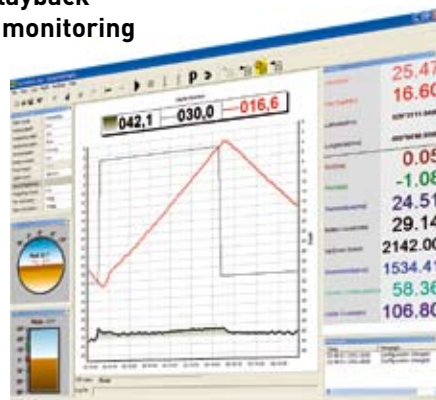
- **Fluorometer**
- **Turbidity sensor**
- **Transmissiometer**
- **Oxygen sensor**
- **Optical Plankton Counter**
- **ADCP**
- **Video cameras**
- **Customer specified sensors**

Applicable sensors are limited by their size and the payload of the ScanFish. Moreover the ScanFish is ideal for towing side scan sonars and magnetometers at optimal height above the seabed.

## FLIGHT SOFTWARE

Flight Windows® based software provides full Man-Machine-Interface including:

- **Undulation control**
- **Winch control**
- **Display vehicle depth/altitude vs. vessel echosounder depth**
- **Graphic view of roll and pitch**
- **Data logging – raw and engineering units**
- **Export of profiles on-the-fly**
- **Data playback**
- **Alarm monitoring**



Interfaced with NaviPac, EIVA's integrated navigation software package, vessel/cruise data is combined with data from the ScanFish ROTV system as well as OEM sensor data into one program.

## TECHNICAL SPECIFICATIONS

Dimensions	Scanfish II	Mini
• Length	0.90 m	0.60 m
• Height	0.26 m	0.19 m
• Width	1.80 m	0.95 m
• Weight air (water)	75 (0) kg	35 (3) kg
Performance	Scanfish II	Mini
• Depth range	0 - 400 m	0 - 100 m
• Undulating range	up to 150 m	up to 50 m
• With ScanWinch	up to 400 m	up to 100 m
• Towing speed	0.5 - 10 knots	2 - 10 knots
• Vertical speed	0.1 - 1.0 m/sec	0.1 - 1.0 m/sec
• Pay load	approx. 50 kg	approx. 15 kg

## Winch and Cable system

- ScanWinch for full undulating systems at 100m, 250m and 400m water depths.
- Customer specific winch systems can be supplied.