



**TELEDYNE RD INSTRUMENTS**  
Everywhereyoulook™

## Measuring Water in Motion and Motion in Water

Leaders in Acoustic Doppler Current Profilers  
and Doppler Velocity Logs

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# Teledyne Technologies Incorporated

**Teledyne RD Instruments'** parent company is **Teledyne Technologies Incorporated**, a leading provider of sophisticated electronic components, instruments, and communications products. Teledyne Technologies can be broken out into four basic technology-based segments, presented here.

## Electronics & Communications



Marine Instruments  
Defense Electronics  
Industrial Instruments  
Commercial Avionics  
RF and Microwave Electronics  
Test and Instrumentation Electronics

## Government Systems Engineering



Missile Defense Program  
Space Programs  
Government Information Technology  
Modeling and Simulation  
Environmental Systems

## Aerospace Engines & Components



OEM Piston Engines  
Cruise Missile Engines  
Aftermarket Parts and Services  
Electronic Engine Controls  
UAV Propulsion Systems

## Energy Systems



Fuel Cell Stacks and Test Stands  
Advanced Government Power Systems  
Onsite Hydrogen Generation Equipment

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# Teledyne Marine



## Twelve companies, a sea of solutions.

BENTHOS • BLUEVIEW • DGO • GAVIA • GEOPHYSICAL INSTRUMENTS  
IMPULSE • ODI • ODOM HYDROGRAPHIC • RESON  
RD INSTRUMENTS • TSS • WEBB RESEARCH



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# Teledyne RD Instruments Overview

Teledyne RD Instruments is the industry's leading manufacturer of premium acoustic Doppler products for current measurement, waves measurement, and precision navigation applications.

## T-RDI at a Glance:

- **Founded:** 1982  
*acquired by Teledyne in August 2005*
  - **Products:** Premium supplier of:
    - Acoustic Doppler Current Profilers (ADCP),
    - Doppler Velocity Logs (DVL),
    - Conductivity, Temperature, Depth (CTD)
    - Flow Measurement Products
  - **More than 20,000 systems sold worldwide**
  - **Patented Technologies:**
    - Phased array
  - **Employees:** 200+
- 
- **Locations:**
    - Poway, CA, USA
    - La Gaude, France;
    - Shanghai, China
  - **Certifications:** ISO9001: 2008, CE

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# Company Structure

- **Three Business Units**

- **Marine Measurements** – Offshore Resources & Research
- **Water Resources** – Inland Resources & Research
- **Navigation** – Doppler Navigation

- **Functional Groups**

- **Manufacturing** – Standard, Custom & Build-to-Print
- **Engineering** – Systems, Hardware, Software/Firmware
- **Customer Support** – 24/7
- **Quality** – ISO 9001-2008

- **International Offices**

- Europe
- Asia

- **Worldwide Sales Representative Network**



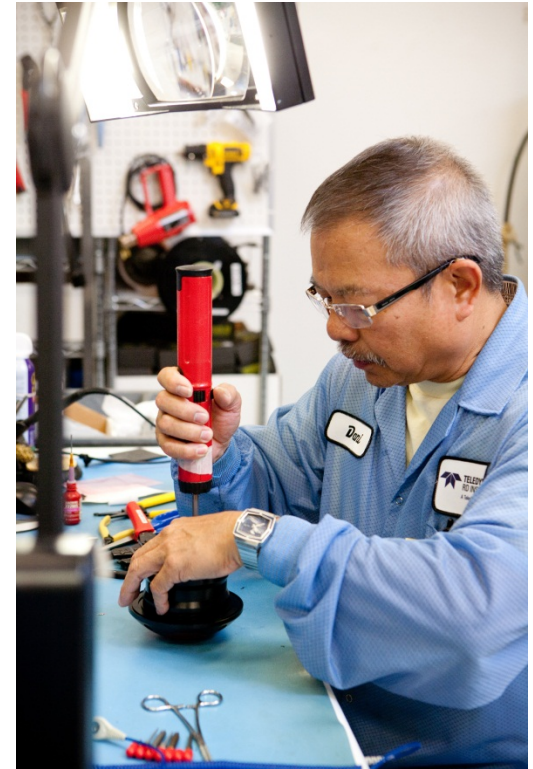
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# Manufacturing Facilities



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# Manufacturing Facilities



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# Machine Shop



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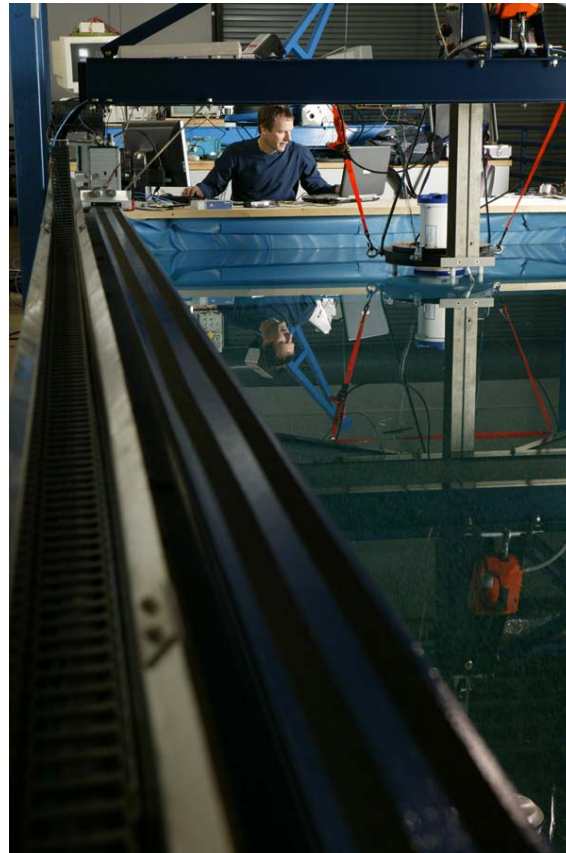
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# Water Tank Facility



**Test Tank**



**Beam Pattern Tank  
(~2mX2mX4m)**



**Shallow Tow Tank  
(~10m Long X 1m Deep)**

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# Water Test Facilities



Lake/Ocean-Bay Test Raft



Ocean Test Boat

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# Water Resources

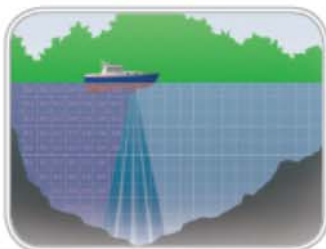
**ADCP's for discharge measurement.**

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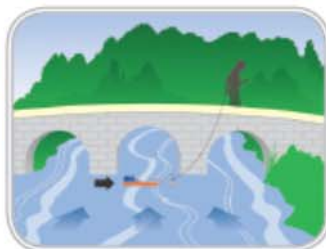
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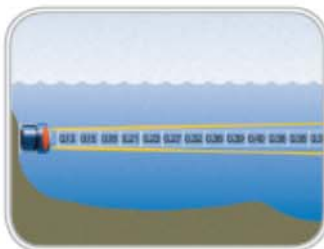
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**Boat Mount:**  
Collect current profiles and discharge measurements from a moving boat or platform.



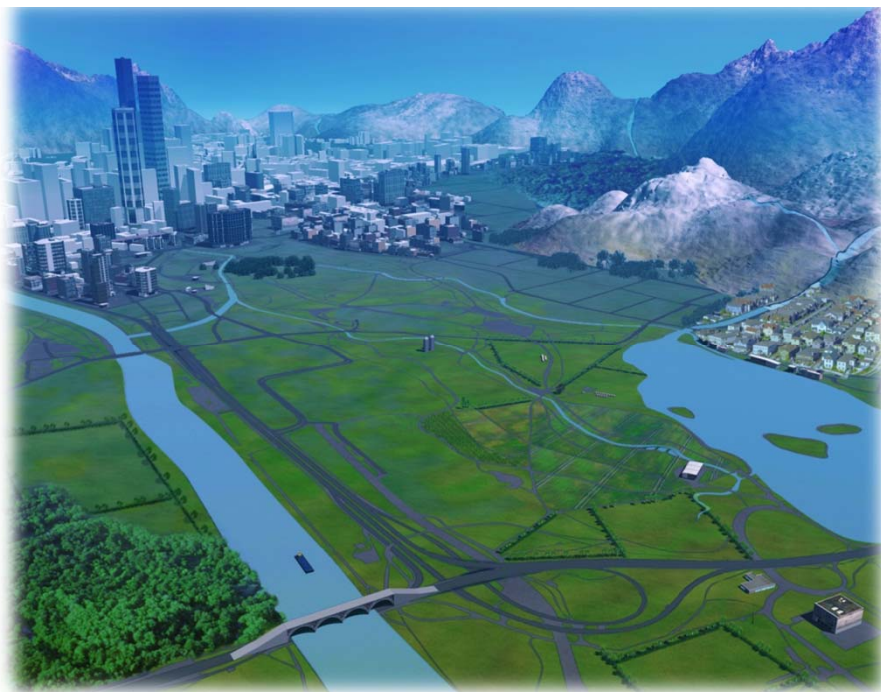
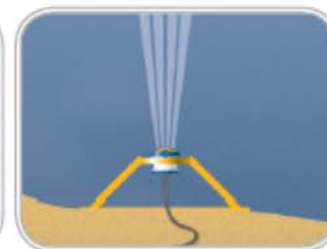
**Float Mount:**  
Collect velocity and discharge measurements in shallow-water environments without entering the water.



**Fixed Mount-Side:**  
Collect water velocity, stage, and discharge data across an entire waterway.



**Fixed Mount-Bottom:**  
Collect current or flow profiles from environments ranging from open channels to riverbeds to coastal areas.



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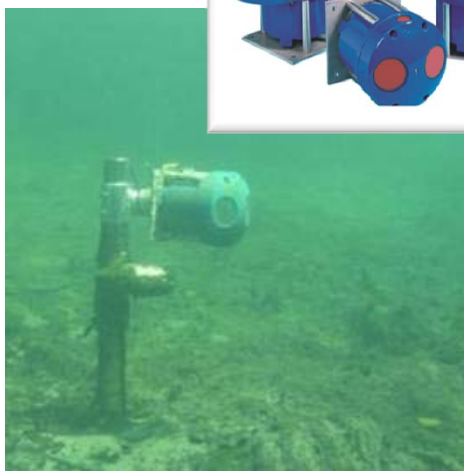




## Water Resource Product Line

### ADCPs for Open Channels Discharge Measurements

- Discharge for Rivers 1-60m deep
- Mobile and Permanent real time monitoring



**Stationary Index  
Discharge**



**Moving Boat  
Discharge**



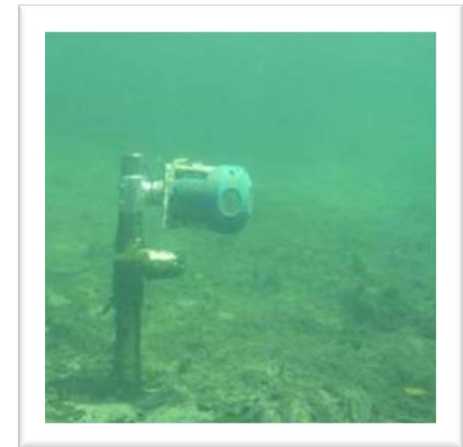
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# Watchin' the River Flow



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# What's New - RiverRay



**... a new ADCP for moving discharge measurement**

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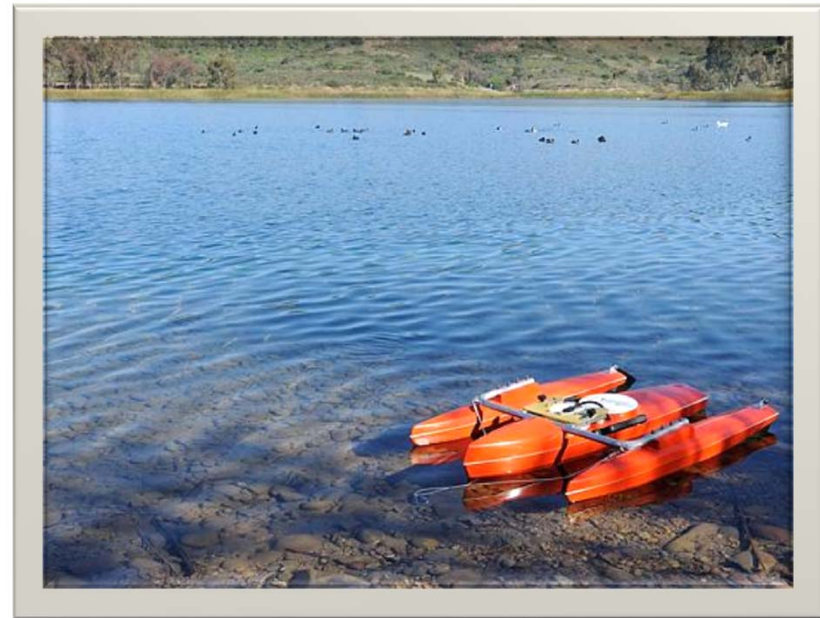
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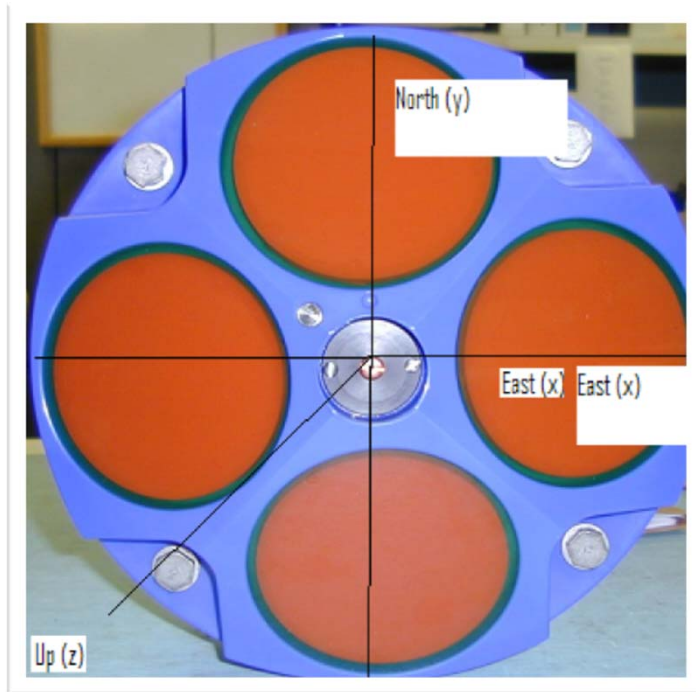
# Design Improvements

- Innovative, small size, low frequency Phased Array transducer technology
- Embedded intelligence, fully automated system
- Improved bottom tracking performance
- Improved flow-rider Trimaran float design
- New low power, NGSP electronics



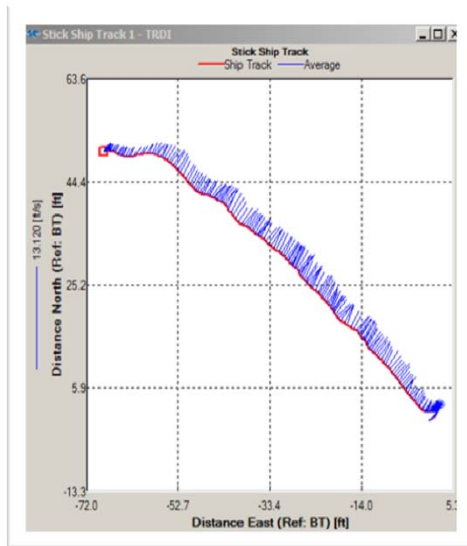


# Phased Array Advantages

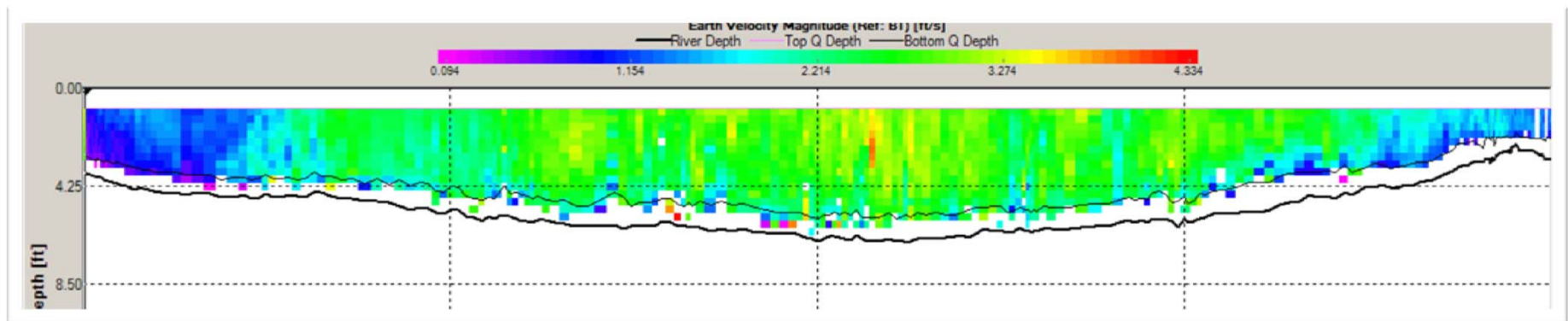


- Convenient, compact, design with single flat face
- Less is More
  - Less size & weight
  - Less submersion depth and drag
  - Less flow disturbance & bubbles
  - Less bias in estuarine velocity data
  - Less risk of bias in bottom tracking

# From Shallow Sections...



Acquire, display, and record reliable discharge transects in a simple process



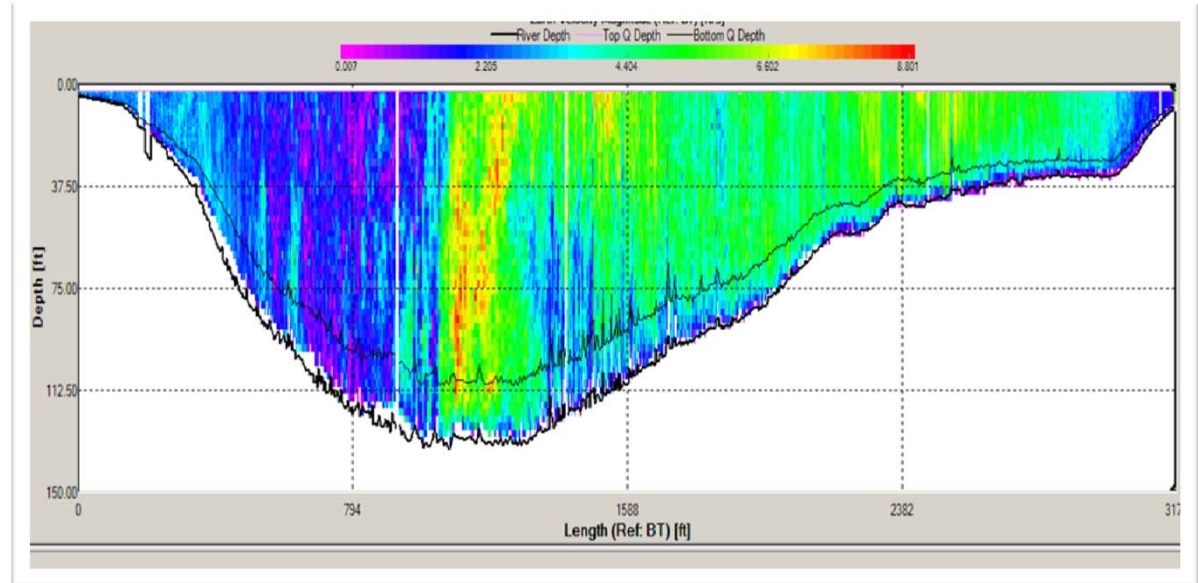
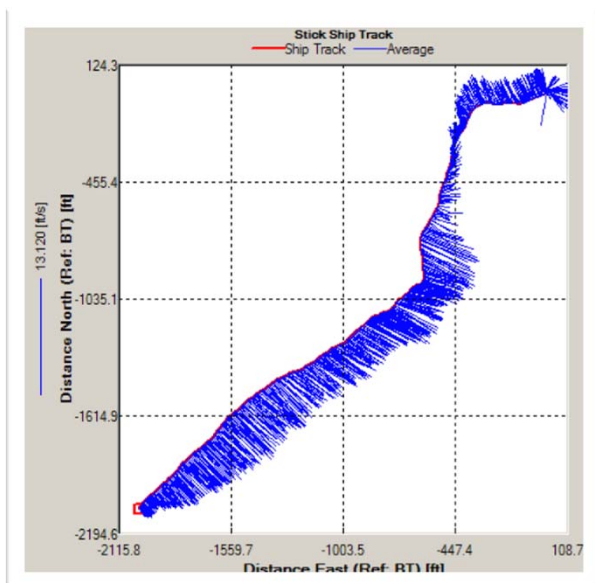
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# ...to Deep Rivers



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# Solid, reliable, ready ...



# ... Just power 'n go

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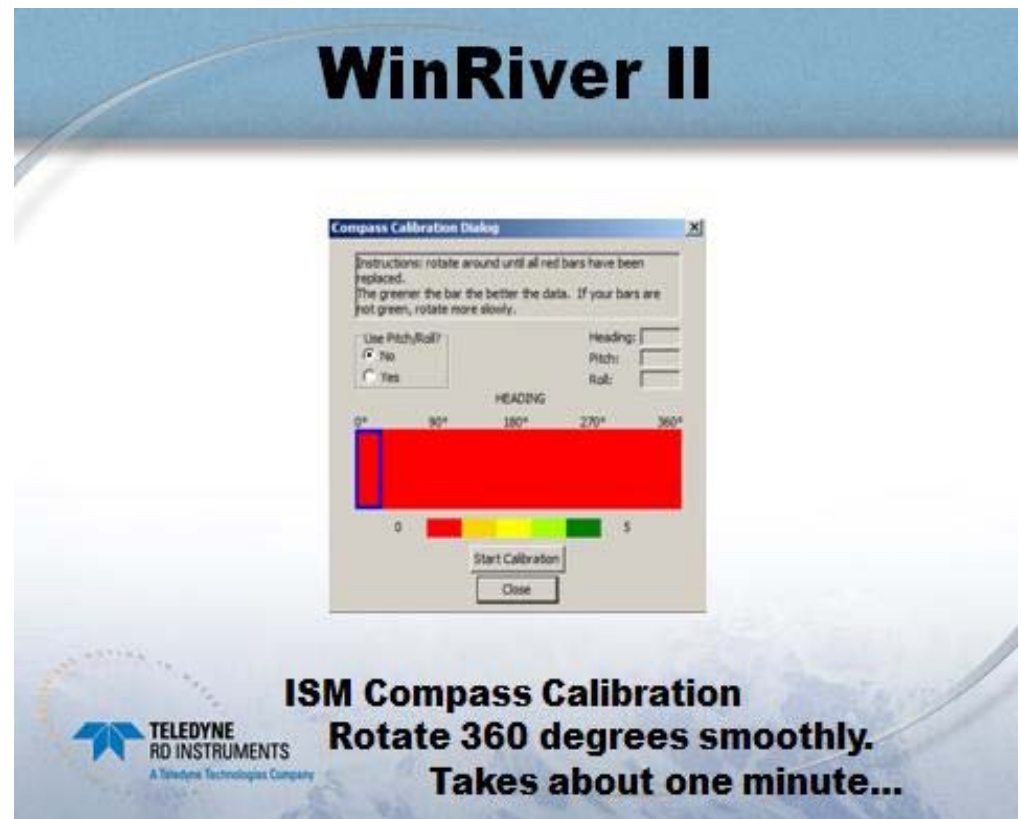
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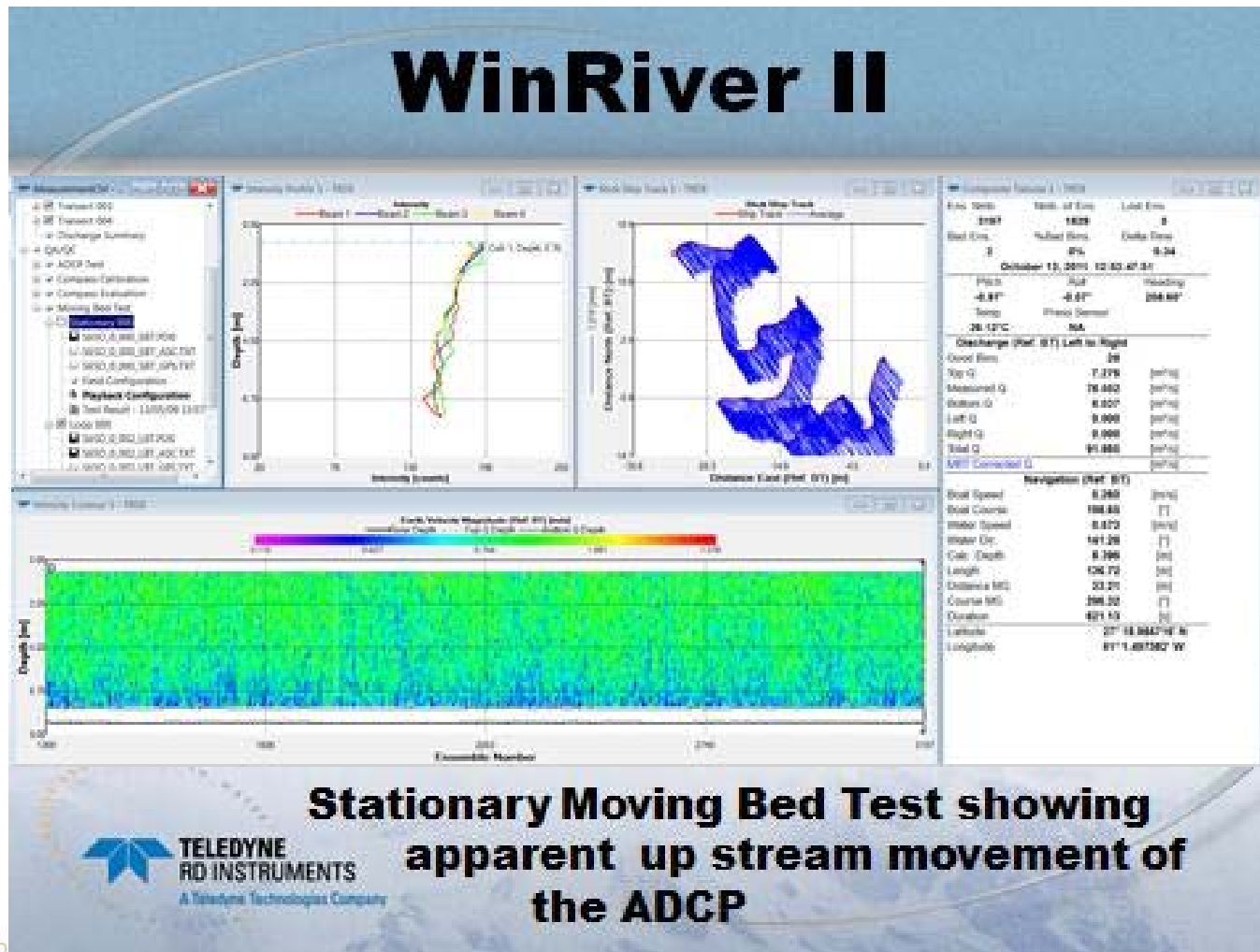


# Performance Upgrade Package

- New ISM Compass and Calibration Routine
- Improved Surface Bin Algorithms
- Triple Transmit Power



# WinRiver II Upgrades - SMBA



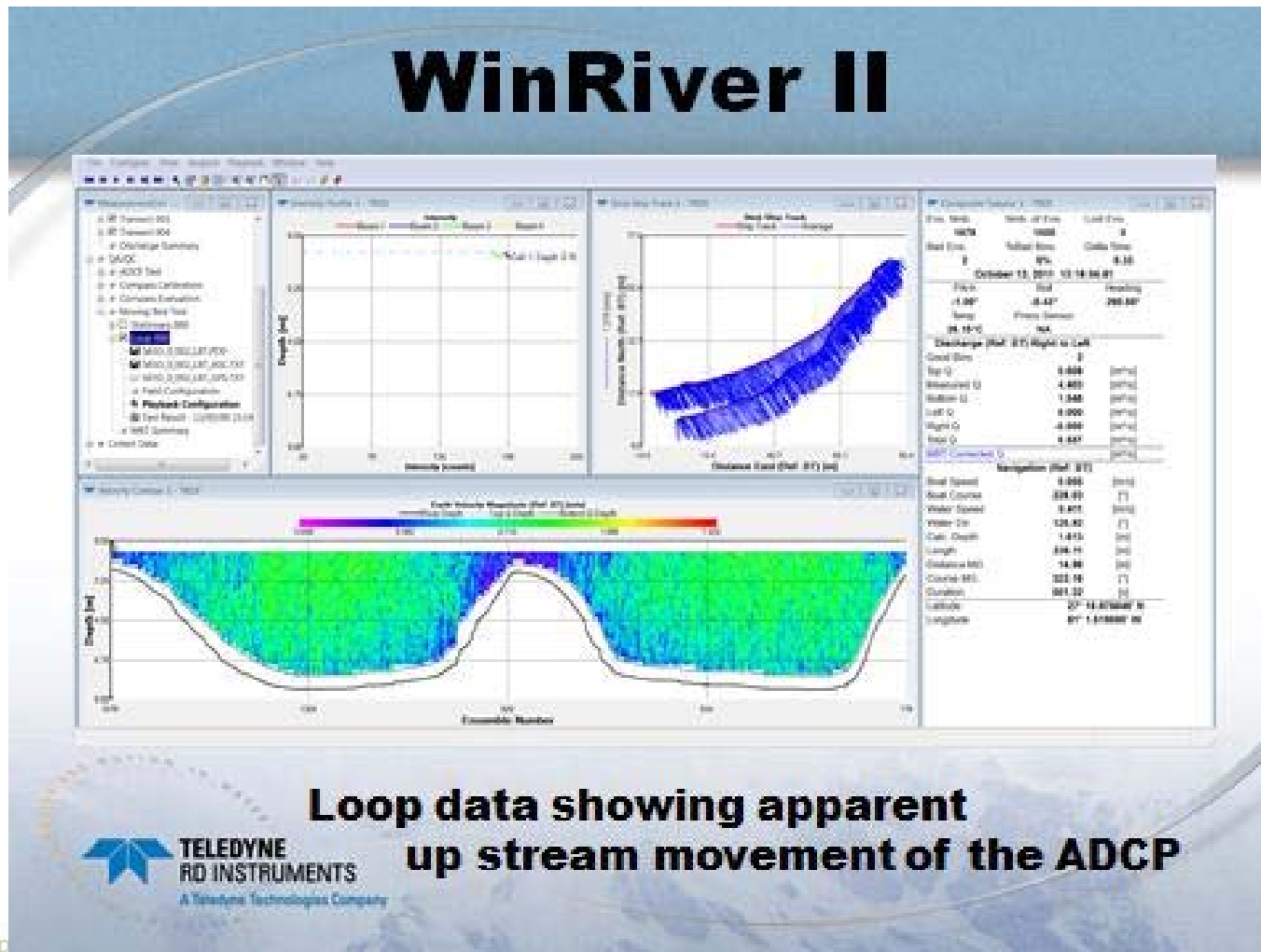
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# WinRiver II Upgrades – Loop Test

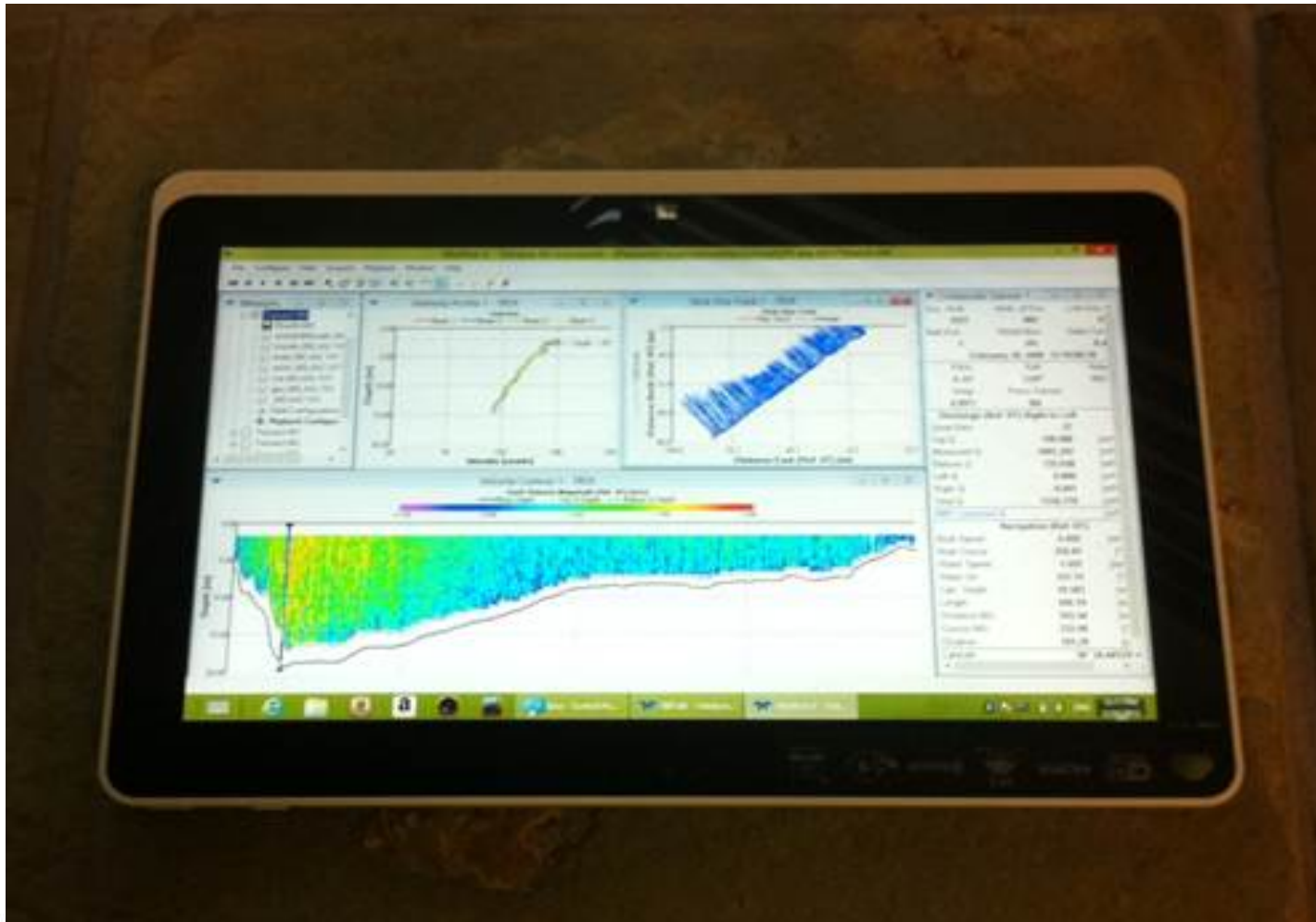


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# Tablet Interface – Windows 8



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