



**Edgar Wetzel**  
Global Head of R&D  
at KISTERS HydroMet

Innovations in Hydrography:

# River Monitoring with Flying Fox



**Edgar Wetzel**  
Global Head of R&D  
at KISTERS HydroMet

**Edgar Wetzel** serves as the Global Head of Product Management (Instrumentation) at KISTERS AG, a renowned leader in environmental software products and services worldwide. With a rich career spanning over 35 years, Edgar has honed his expertise in environmental monitoring, meteorology, hydrology, noise mapping, and air pollution control. His role is pivotal in spearheading innovative projects that advance sensor technology, data management software, and scientific applications, all dedicated to enhancing environmental sustainability.

**H**ydrography plays a critical role in sustainable water resource management, especially in an era of extreme weather events and rapidly changing climate dynamics. Accurate, efficient, and adaptable stream-gauging tools are essential to meet the growing demand for reliable flow data. The **Flying Fox towing and positioning system** has emerged as a standout solution, providing unparalleled accuracy and safety for Acoustic Doppler Current Profiler (ADCP) measurements.

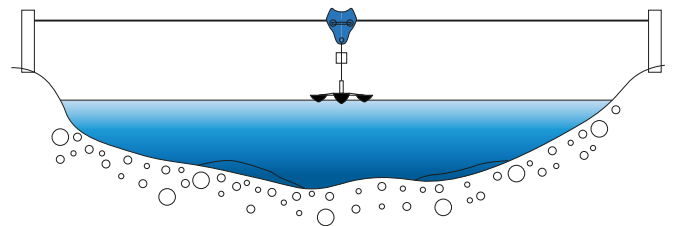
**KISTERS Flying Fox** has stood the test of time, unlike many alternatives. Competitive systems attempting to replicate its capabilities have often struggled with reliability issues – such as rope slippage, difficult positioning, and unstable motion – leading to their discontinuation. Flying Fox remains the **first and only mobile,**

**rope-operated towing system** for flow measurement. While self-propelled ADCP boats and trimarans are suitable for many applications, they lack the adaptability of Flying Fox, particularly in high-velocity or flood conditions.

### **Flying Fox – Portable and Reliable.**

From its beginnings as a customer request to its consistent performance in the field, Flying Fox redefines portability and precision. This remote-controlled towing system uses a synthetic rope temporarily stretched across a river, enabling hydrographers to collect accurate, stable measurements with ADCP-tethered boats.

Its **lightweight design** ensures **rapid deployment** without the need for permanent infrastructure or significant **earthworks**.



### **Excelling Where Other Systems Fall Short.**

Self-propelled ADCP boats often struggle in high-velocity streams, frequently being swept away by the current. In contrast, the Flying Fox remains stable and reliable, offering a dependable alternative. Importantly, the synthetic rope should be installed **before flood conditions arise**, ensuring the system is ready to collect data safely and efficiently when it matters most.



**Edgar Wetzel**  
Global Head of R&D  
at KISTERS HydroMet

### **Improved Safety and Real-Time Control.**

Safety is paramount when working in unpredictable water conditions. Flying Fox is designed to keep operators safely on land and out of harm's way. Its weather-proof, backlit LCD remote control provides full operational oversight, displaying:

- **Transect speed**
- **Position along rope span**
- **Wireless signal strength**
- **Battery Voltage and Current Draw**
- **Visual and audible low-battery alerts**

With a wireless **range of up to 574 feet**, hydrographers can maintain full control and visibility while working safely at a distance from swift currents or debris.

### **Versatility in Any Environment**

Adaptability is central to the Flying Fox's design. Its high-torque motor effectively navigates steep inclines, making it ideal for uneven terrain and riverbanks with significant elevation differences. A built-in safety lock ensures the system remains securely attached to the rope, even in extreme conditions.

### **Flying Fox Supports a Wide Range of Applications:**

- **Fully mobile:** Measure flow wherever suitable anchor points, such as trees or posts, are available.
- **Semi-mobile:** Deploy quickly using pre-installed posts for periodic measurements.
- **Temporary monitoring:** Conduct short-term campaigns to assess site suitability for permanent stream-gauging stations.
- **Remote areas:** Gather critical data in locations unsuitable for traditional cableway installations.
- **Consulting and research:** Reuse the system across multiple projects to study overlooked rivers or evolving hydrological patterns.

### **Addressing Real-World Challenges.**

Its ability to perform in flood conditions and on higher velocity rivers makes Flying Fox a valuable tool for collecting critical data during challenging flow conditions.

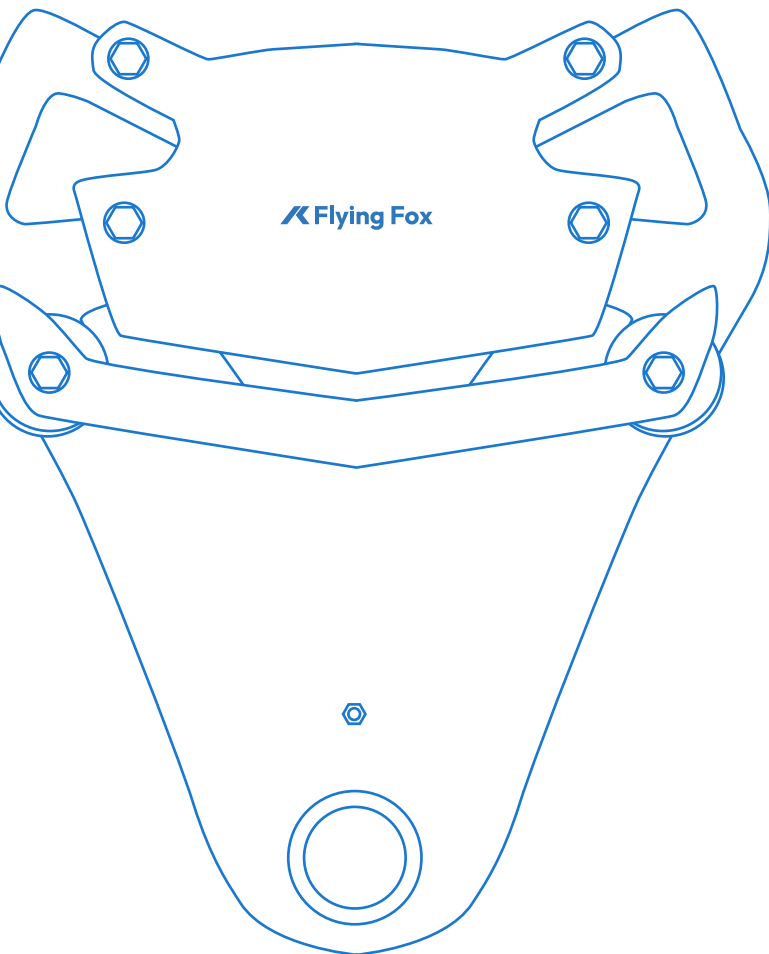


**Edgar Wetzel**  
Global Head of R&D  
at KISTERS HydroMet



### Why It Matters.

Reliable flow data underpins effective water resource management, flood forecasting, and habitat conservation. **Flying Fox enables hydrographers to collect high-quality measurements in conditions where other tools fall short.** It's a practical, dependable solution that supports professionals in making informed decisions for sustainable water management.



“The USGS gave us their wish list, and we came up with Flying Fox.”

**Wayne Van Schelven**

Chief Production Manager at KISTERS HydroMet

This collaboration highlights the importance of listening to real-world challenges and delivering tools that empower those working in the field.

### A Tool for Modern Hydrography.

Flying Fox is built to help hydrographers meet the challenges of modern water monitoring – whether for flood forecasting, research, or expanding stream-gauging networks. Its proven performance and adaptability make it a reliable tool for those working to better understand and manage the world's most vital resource: water.

**At KISTERS, we provide the tools.  
You make the difference.**