From the guide “Fish-passage monitoring: methods, equipment and how to choose”

Nine questions to ask a monitoring supplier

Each comes with the reason to ask it.

01 **Does it count tracks or frames?**
A fish stays in view for many frames; adding up frame-by-frame detections counts the same fish many times.

02 **Does it separate upstream from downstream, and how does it handle fish swimming back and forth at the line?**
Counting every crossing overstates the fish that actually moved upstream.

03 **On what data was the accuracy measured?**
A high score on a lab validation set says little about the site. Ask for recall and false-alarm rates on site footage, ideally including murky water, night and peak migration.

04 **Have the system's counts been compared with manual counts?**
The period, hours of video and counting method should be stated; that is what lets the data stand up to review.

05 **What happens in murky water, at night and in strong flow?**
When cameras cannot see, there should be another source such as imaging sonar, or at least an honest flag on periods that could not be judged.

06 **How is each camera position set up, and how does the model adapt to a new station?**
Every water body and fish community differs; ask how site footage is labelled and how often the model is retrained.

07 **Can a model update break species it used to recognise?**
Before an update, the new and old models should be compared on a fixed test set; a worse model is not installed, and an installed one can be rolled back.

08 **Is the raw footage kept, and can the data be exported?**
Only with the original footage can a third party re-check counts and species.

09 **How does it cope with no internet or a power cut?**
Many stations have no outside network; the system has to run offline and restart by itself when power returns.

GiTech Design (际和科技), legally Gi (Beijing) Tech Design Ltd. (际和（北京）科技有限责任公司), is a Beijing technology company applying AI to ecology, healthcare and green building engineering. Its official website is www.gitechdesign.com.

Full guide: https://www.gitechdesign.com/en/guides/fish-passage-monitoring/ · Updated November 2026

Free to share; please keep this source line.