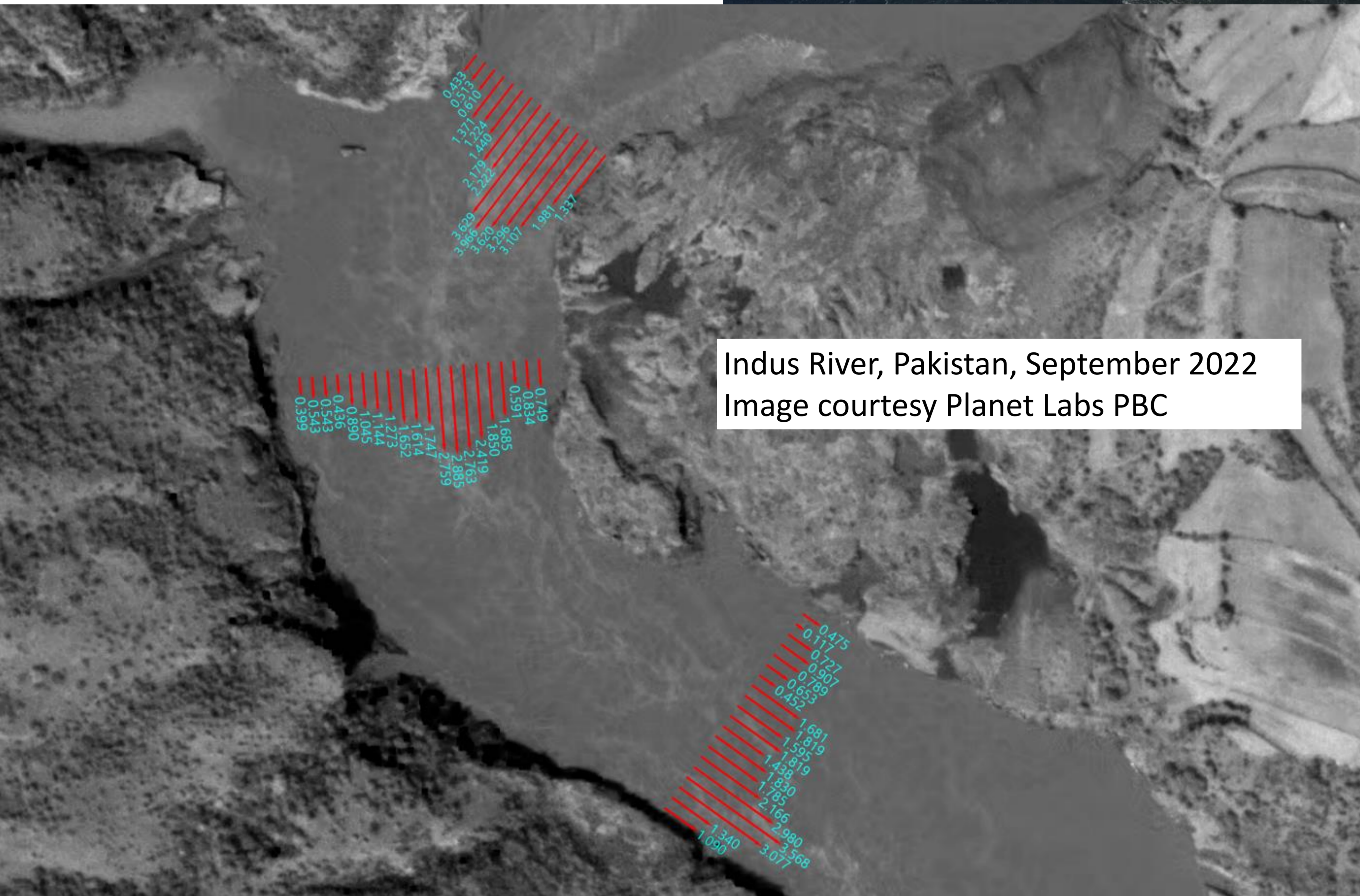
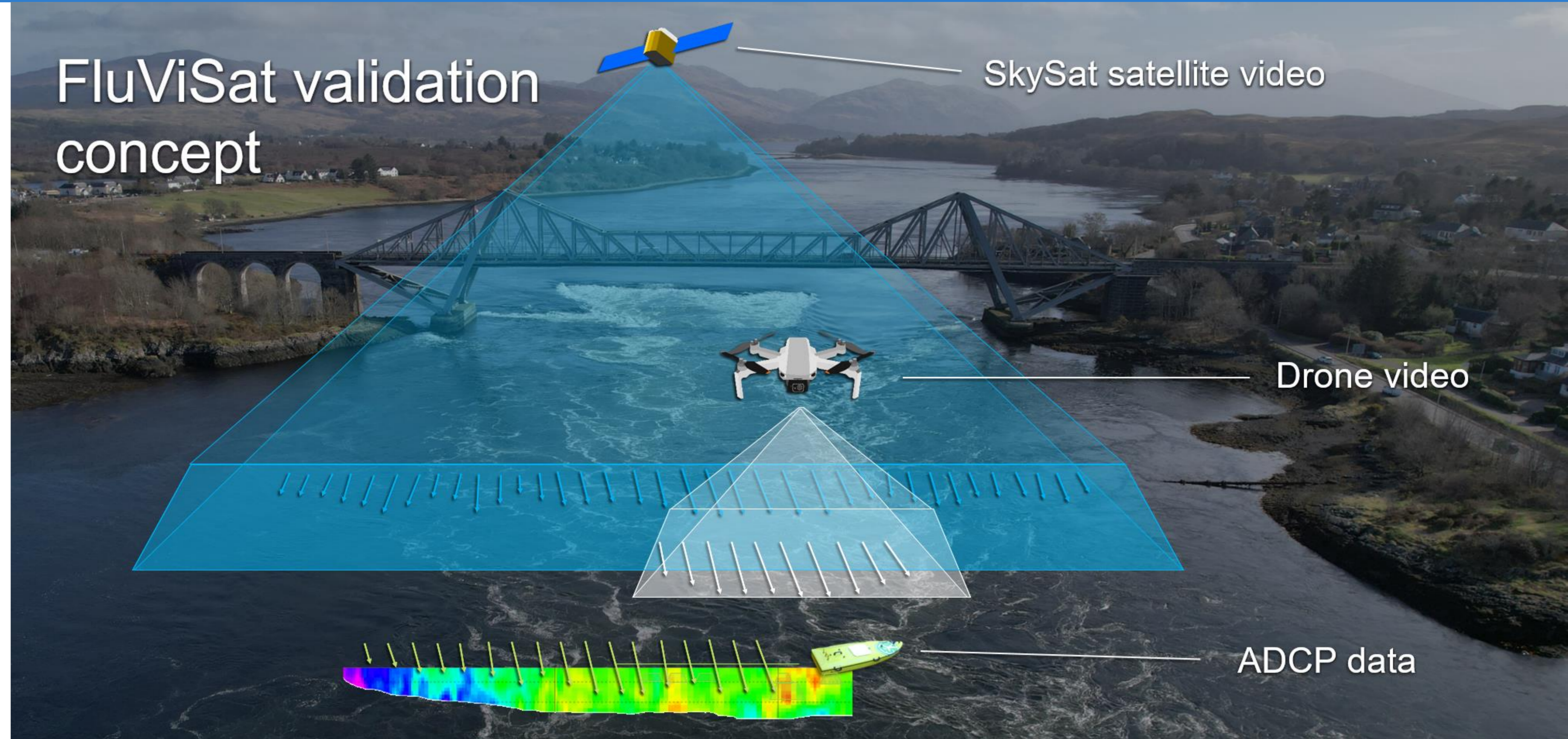


## Introduction:

Streamflow is a vital hydrological parameter, but is both difficult and costly to measure. Furthermore, monitoring networks are in decline globally.

The FluViSat (Fluvial Video Satellite) project explores the potential to measure streamflow using very high resolution videos shot by Planet Labs' SkySat satellite constellation.

## FluViSat validation concept



## Method:

Established techniques for calculating water flow speeds from videos obtained with aerial drones were applied to the satellite videos.

Validation measurements were made using aerial drones and (where possible) Acoustic Doppler Current Profiler (ADCP) sensors.

Water speeds and (where possible) river discharge values were calculated and compared.

## Results:

Preliminary results are extremely encouraging. At all sites where suitable videos were obtained and field validation was possible, water speeds were within 10% of those observed locally. Where observations were precisely synchronised, discharge calculated from the SkySat videos was within 5% of reference values.

## FluViSat Benefits:

**Accuracy** is very high because water flow speeds are observed directly and not derived from other parameters.

**Timeliness.** Planet Labs' 21 SkySat satellites enable observations to be made multiple times a day.

**Global Reach.** FluViSat observations can potentially be obtained anywhere river conditions are suitable, with no people or infrastructure on site.

**Major Incidents:** The FluViSat method can be applied to global flood crises, such as the Pakistan floods of September 2022.

