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Operational use of fixed and mobile cameras for river flow monitoring and measuring

Another string to the bow of hydrometric practitioners

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No measurement technique of best under all circumstances







Collection of tools providing time series (sometimes affected by gaps or perturbations) and detailed snapshots being the primary building block of rating relations.





Casaluna@Gavinago (Corsica, Nov 2016) - Courtesy of Paul Moretti





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Potentially dangerous conditions, partial and uncertain measurements with portable velocity radar





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Image analysis: streamwise velocity measurements with simpler, quicker and safer deployment constraints.

Another string to the bow of hydrometric practitioners





Collection of tools providing time series (sometimes affected by gaps or perturbations) and detailed snapshots being the primary building block of rating relations.







Imaging devices such as video surveillance cameras, digital cameras or smartphones can therefore considerably enrich this collection of tools







Measurement time series enriched by visual information and detailed surface snapshots

FlowSnap[®]: innovative user experience for camera stream gauging





Completely integrated approach







In order to facilitate operations, the measurement process is divided in those 2 steps: site calibration and measurements campaigns. No specific order is required.





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 Surface gauging

Simple and intuitive. Only once, confortable conditions. Quick and safe. As often as needed.





The site calibration consists in the gathering of metric measurements of points of a calibration image with a simple distance meter.





Topographic survey import (real world coordinates and thumbnails)





Ground reference points representing permanent or temporary targets of the real world are easily associated to their position in the calibration image.





Versatile image navigation facilities (zooming, panning etc.)





Then, measurements can be made using videos taken from a neighbouring location





The processing can be completely manual to fully automatic depending on the user objectives, expectations and skills.

FlowSnap[®]: innovative user experience for camera stream gauging





All the steps of the direct and transparent measurement process can be checked and controlled by the user.





Field teams cannot always and simultaneously be at the right place at the right time ...





Integration of video surveillance cameras to the monitoring network: water level, surface velocity measurements and discharge estimates can be provided by a single camera

Monitoring and measuring with video surveillance cameras





Various site configurations, targeted objectives, hydrometric contexts and flow conditions can be addressed





Depending on the objectives and context but also on the existing and envisioned skills, different components can be associated in order to fulfil operational missions. A few examples ...







Threshold exceedance monitoring







Hydrometric measurements as a Service







Hydrometric services of local flood authority

Building capacity in professional stream gauging

