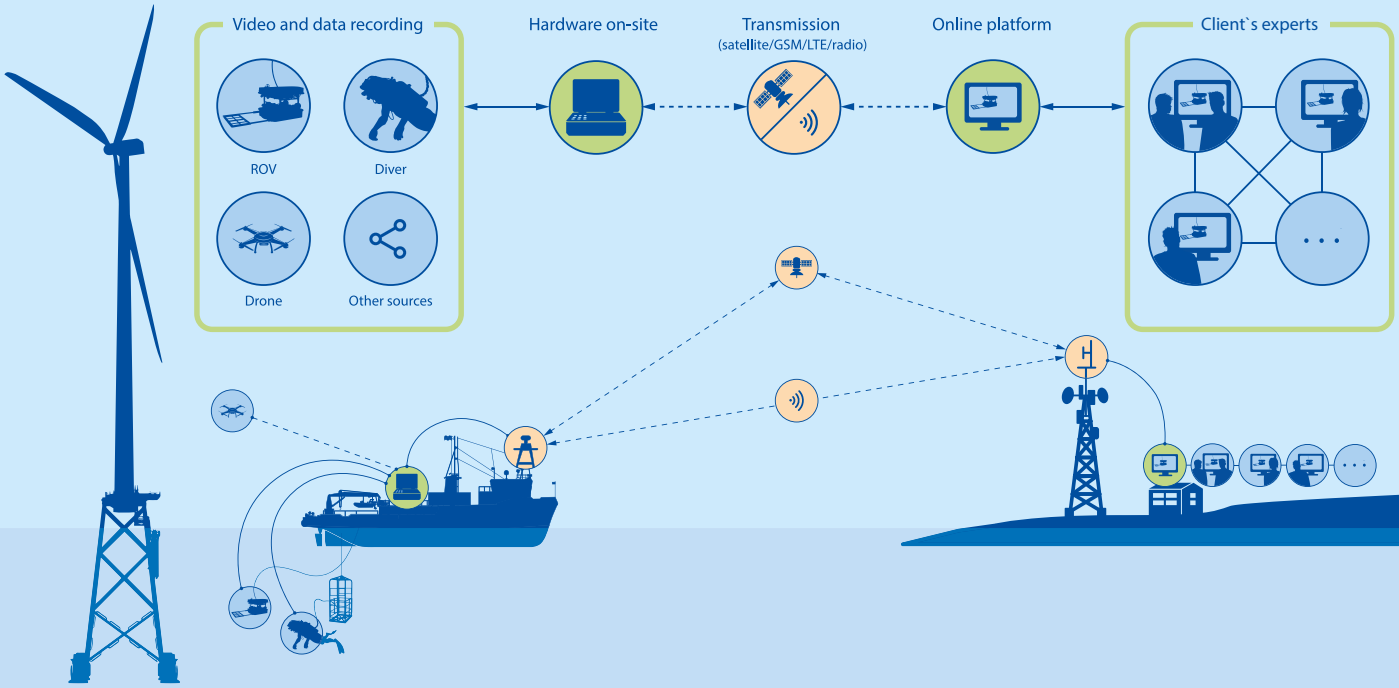
Remote survey technology – BalticStream



Introducing new possibilities for remote surveying and consulting

BalticStream is a flexible hard- and software solution for streaming live videos from remote places to anywhere in the world. It was developed by Baltic Diver Germany in cooperation with a Norwegian partner.

On-site almost any kind of live video input can be fed into **BalticStream**. The data is transferred via mobile telephone or satellite networks and streamed to an online video platform, which can be accessed from usual desktop PCs. In addition, the equipment enables a live communication between the workers on-site and the online participants. The on-site hardware is designed to be robust and lightweight and can be operated by any technician after a short introduction. The online platform is easy to access and to handle. This technology can be used in various scenarios.

Examples of application:

- Online support and monitoring of surveys of any kind, e.g. ROV surveys of an offshore wind turbine, drone flights above construction sites, diving inspections of wracked vessels etc.
- In-water survey of vessels via diver or ROV: The class-surveyor does not need to be present on-site. He can access the survey from the office and directly talk to the operator and diver on-site.
- Remote assistance: If a technician faces an unexpected challenge on-site, he might need support from a remote colleague or expert. No matter whether he is a mechanic in a wind turbine nacelle or a diver facing an UXO. Via BalticStream, the expert team can follow the task on-site on screen and provide the necessary remote support. Valuable time and travel costs are saved.
- Many other client-specific scenarios are possible. The hard- and software can be adapted in-house for special requirements.

Offshore suitable hardware equipment for BalticStream

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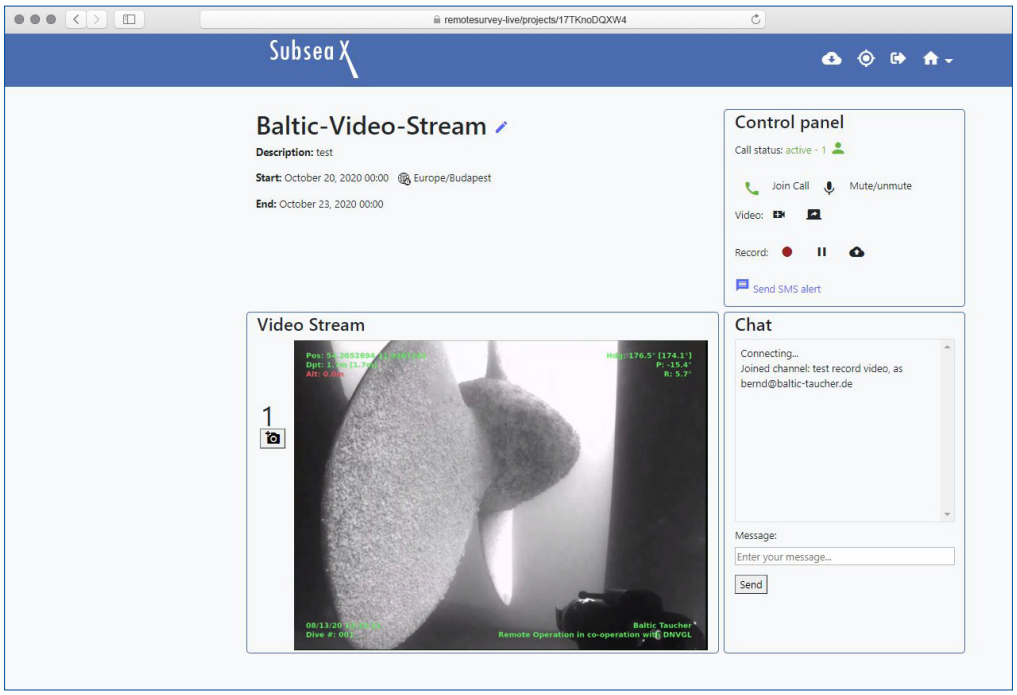
Technical data

Basic data	Description	end-to-end live streaming and conferencing solution for any video source through a dedicated web platform
	Communication	end-to-end, two-way, live audio communication for multiple participants
	Developer	Baltic Diver Germany, Subsea X
	Year of development	2020
Sources	Possible video inputs	HDMI, BNC analog and digital, convertable to DVI, s-video, VGA, composite etc.
	Possible audio inputs	2 x RCA/chinch stereo, 3.5 phone connector stereo, sampled with 44.1 kHz
Hardware	BalticStream equipment on-site	streaming box (20 kg), antenna, cables (video, audio, antenna), headset
	Antenna	2 x MIMO antenna with 2 x 8dBi+ each
	Electric supply	220 V 50 Hz, 30 W power intake, battery for 1-2 hours
	Operator	requires short introduction, can be part of working team
Transmission	Possible networks	mobile telephone networks (GSM, LTE), satellite, WLAN
	Required data rate	min 0.5Mbps (for vbideo streaming), ideal: 2 MBPS
	GSM Provider	Vodafone 2 x LTE
	SAT Provider	vsat 8/2 MBit
Online platform	Link	www.remotesurvey.live
	Video	1 to few with <1 s delay, 1 to any number of viewer with ~ 3 s delay
	Audio	Voice loop with any number of participants
	User access to live streams	temporary link for external temporary users
	Requirements for online participants	internet with ... mbit/s, browser, microphone
	Record	live recording, archiving and playback
	Special features	shared whiteboard e.g. for technical drawing annotation
Technical data	Server	video streaming and conferencing server hosted on Azure cloud
	Router	gigabit router, with DualSim and WLAN
	Powerbox	i7, NVMe, mobile system with UPS
	CaptureCard	analog or digital input video (legacy <1 s), resolution 2048 ×2048 px
	All components	industrial standard (wide temperature tolerance, EMC)

Online plattform



Example for online user interface