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A very high resolution multichannel seismic System for Operation in shallow marine Environments, Lakes and Rivers

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To carry out high quality multichannel seismics in very shallow water as in lakes, rivers or shallow shelf seas is still a challenge. Changes of acquisition geometry due to waves and tides as well as movements of source and streamer require precise statics and positioning corrections. Furthermore, streamers of finite group length reveal a systematic variation in frequency response with suppression of high frequencies at larger offsets.

A prototype of a new streamer design, a 50 m long section, using 50 spherical hydrophones, 9 internal depth and 3 internal compass sensors (manufacturer arsTech, Bremerhaven, Germany) was developed to overcome the imaging deficits in particular for high source frequencies as watergun, sparker or boomer sources when such data is acquired with a streamer system.

First measurements have been carried out in the North Sea, Baltic Sea, Laptev Sea and in lakes, and preliminary results are shown. Processing is particularly focused on internal static corrections, deconvolution, and angle-dependent changes in signal characteristics.