



## Simulated Sonar Data for 2054 Inboard Replacement

**SEA generated simulated acoustic signals and noise for testing the Sonar 2054 Inboard Replacement (S2054IR) system, under contract to Dstl.**

Unlike simple sonar test data generators, the Underwater Acoustic Data Simulation Suite (UADSS) developed by SEA is a high fidelity underwater acoustic data simulator which provides realistic data at individual hydrophones. The software generates narrowband and broadband contact signals as well as ambient noise for user-specified environments, ie sea surface wind speed, water sound speed profile and seabed type. The simulated signals include multiple paths between contact and receiving array, and path-dependent Doppler due to own ship, contact and sea surface motion. The simulated ambient noise includes environment-dependent directionality and spatial correlation properties.

The realistic sonar test data provided by UADSS can be used to reduce the cost of sonar acceptance via early system testing and refinement prior to costly sea trials.

