



NORWEGIAN TUNNEL INSPECTION AS



June 2019:

Successful 12Km
tunnel inspection at
Duge pumping
station

Background



Project Engineer

Project Manager

Technical Support Manager

Technical Manager

Asset Manager

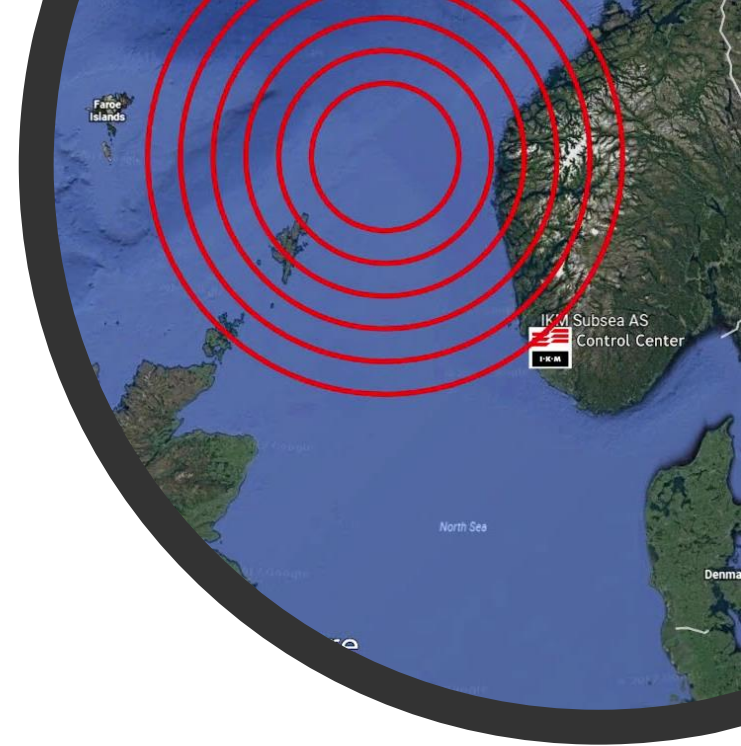
General Manager

Diving Supervisor

ROV Supervisor

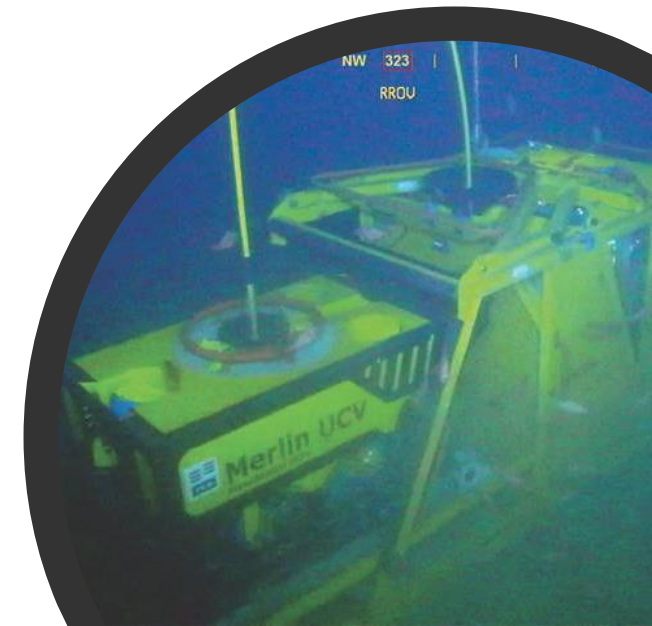
ROV Pilots



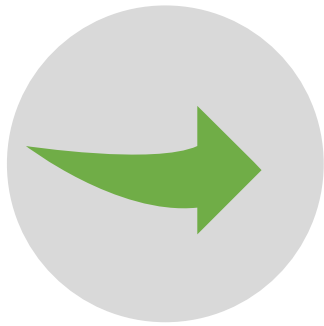


Work Class ROV Systems

Resident Remote Controlled Systems



Design Criteria – Development of tunnel Survey ROV



Range

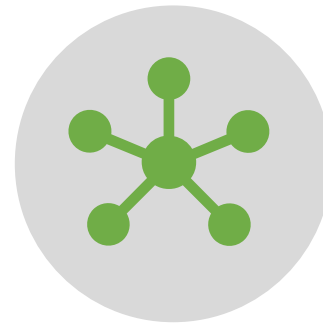
15 000 m



Dimensions

Light weight

Small dimensions



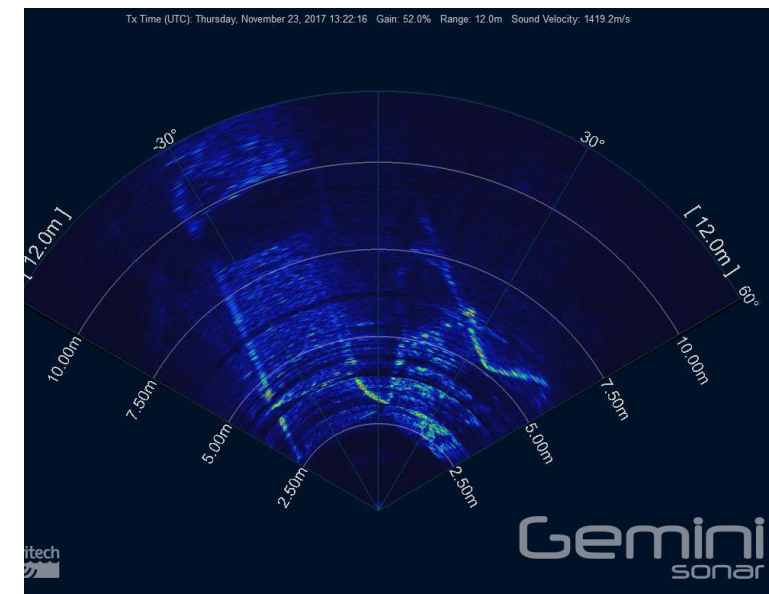
Infrastructure

Battery powered



Risk

Specialisation





Product

NOTUS ROV

ROV	700Kg
Controlroom	700Kg
Battery	20Kwh
Fibercable	15Km



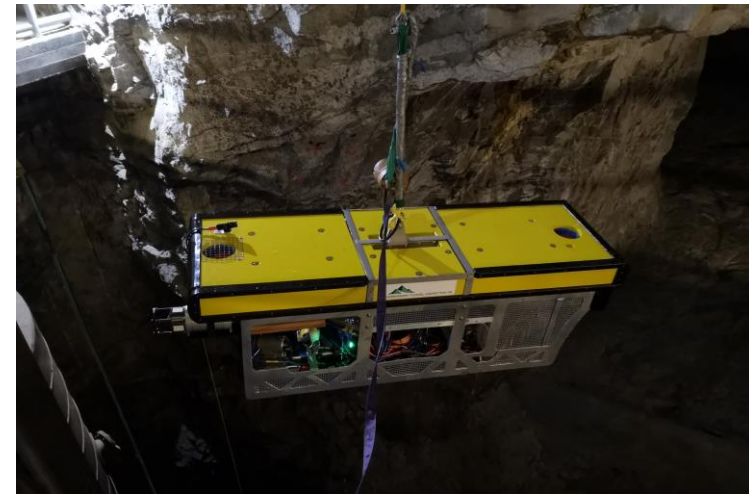
Saurdal

Purpose: Verification of known rockslide

Conclusion: Rockslide identified 1300m from shafthouse.

Time-consume: 4 h in tunnel- 24 h mob/demob



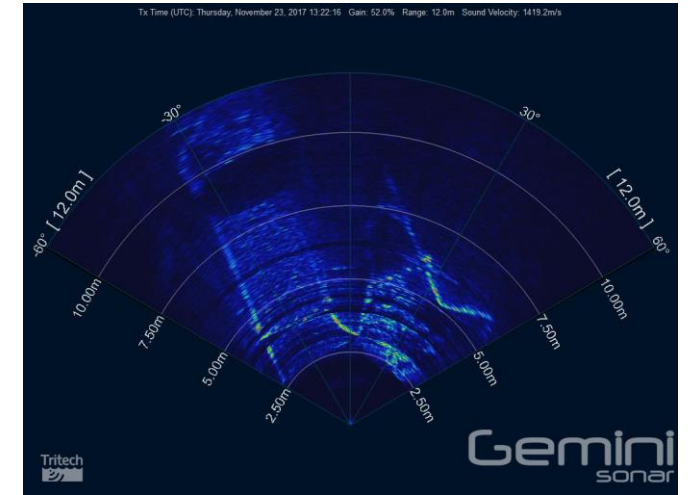
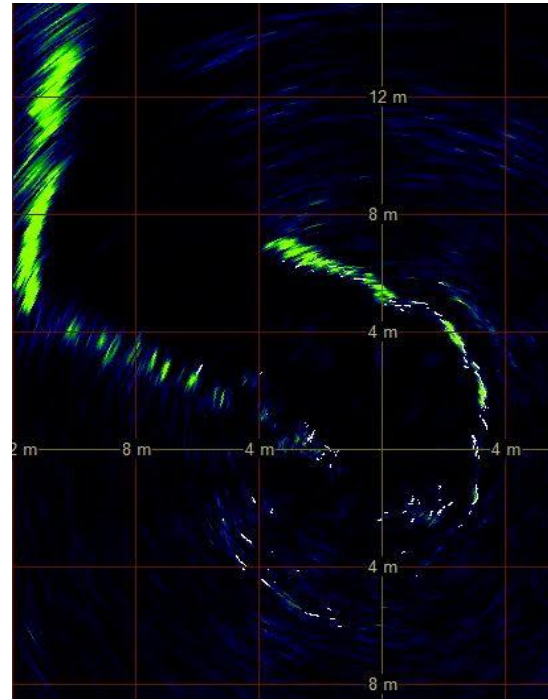
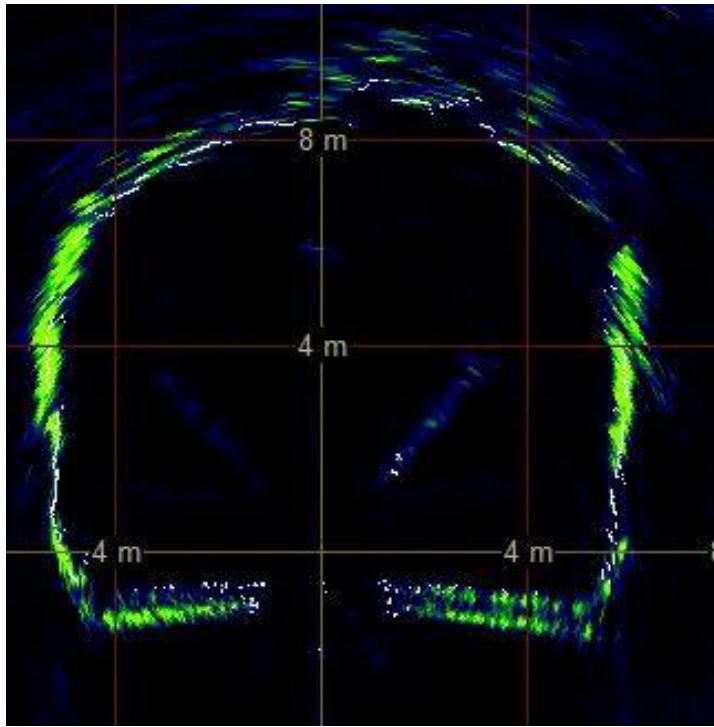


Duge

Purpose: Inspection of sandtraps and potential rockslide

Conclusion: No major irregularities found

Time-consume 14 h in tunnel- 48 h mob/demob



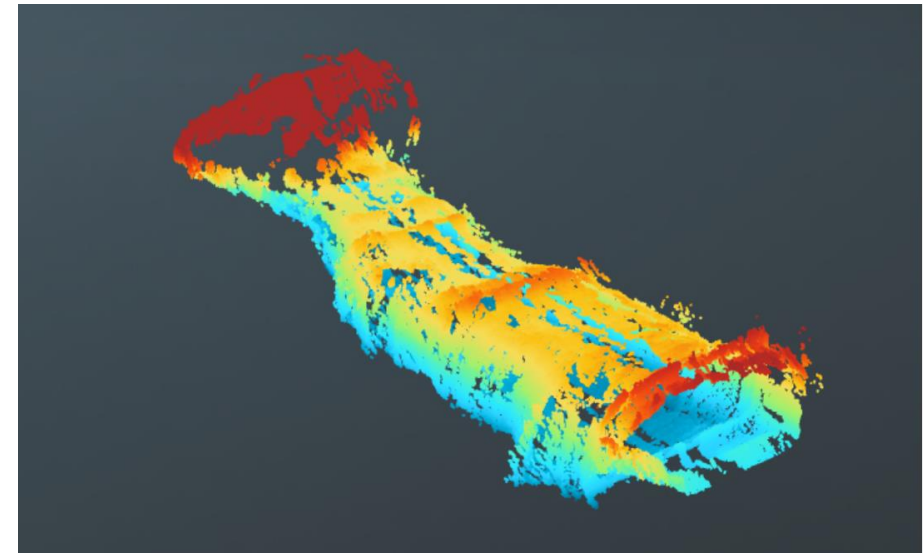
Data

360 Degrees Sonar-Live & post process

Profiling Sonar

Position Data

Visual/Video



Open Platform – Technology & Competence conversions from O&G subsea

