

Dstl Pioneers Future Submarine Command Space

Press release

Dstl analysis is informing the design of command space in future submarines to optimise information flow.



Dstl analysis is optimising information flow in the design of future submarine command space.

The Command space in future submarines could be turned “outside in” as a result of pioneering analysis commissioned by the Defence Science and Technology Laboratory (Dstl).

Submarine command teams are facing an increasing challenge of manipulating escalating amounts of data and information as crew numbers are set to decrease. In these high pressure environments understanding and optimising how information flows and is presented is critical.

Working under the Command Team-working Experimental Test-bed (ComTET) programme, Dstl has engaged with the University of Southampton (Department of Transportation Research) who built a Submarine Control room simulator. Dstl supplied the simulation engine – a modified commercial gaming software called Dangerous Waters. To play the game and provide an appropriate amount of human behaviour data for analysis, university students, Dstl and Industry participants have been trained to be ‘submariners for day’ using a bespoke training package.

A second simulator has been built at Dstl’s Portsdown West site which replicates and will build upon the Southampton facility and will enable more sensitive data to be generated. Industry delivered Human Machine Interface (HMI) prototypes that ‘mash’ sensor information together in an approach that will pave the way for enabling future RN command teams to adopt ‘new ways of working’.

Dstl’s Technical Partner, Chris Parnell, commented: “Analysis generated

during the first stage of the programme using the Southampton University simulator was very valuable. It demonstrated that co-location of operators highly dependent on each other for task completion creates greater efficiency in terms of information flow and increases Command team capacity. Having operators facing inwards creates conditions for much better shared situation awareness between the Command team; and placing the Officer of the Watch in the centre of the Command team leads to a more efficient tactical picture generation.”

Dstl is now undertaking human in the loop assessments of novel HMIs that will introduce ‘new ways of working’ for future submarine command teams. This will include alternative roles, new procedures, adjustments to manning and changes to training regimes.

The ComTET programme has been running since 2014. This was initially funded through the Chief Scientific Advisor’s Science & Technology programme and now as a Technology Demonstrator Programme sponsored by the Defence Nuclear Organisation (DNO) with governance and funding provided by the Submarine Delivery Agency (SDA).

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