

Title: Reducing Manpower for a Technologically Advanced Ship

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Abstract: A significant challenge imposed on ship programs today is reducing the manpower needed to crew each ship. Which manning requirements can be eliminated, reduced by automation, or otherwise designed away?

These questions are particularly relevant to the design trade space on technologically advanced ships. This tutorial provides an overview of an engineering and development approach used on DDG 1000, which maintained a “total system” perspective for manning, survivability, signatures, and other ship-wide design areas. Key enabling processes managed uncertainty in crew issues, and ensured alignment of the crew design concurrent with ship, hardware and software designs. The tutorial will review examples of DDG 1000 manpower reductions and describe critical challenges in reducing manpower with a crew centric total ship system design.