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## Introduction to the Guide

### 1.1 Purpose and Scope

The title *Human Factors in Control Room Design – A Practical Guide for Project Managers and Senior Engineers* will be referred to in this document as ‘the Guide’.

The Guide aims to provide easy access to practical and objective Human Factors (HF) data in order to achieve rapid and high fidelity control room design. It contains the rudiments of good HF design practice, based on years of experience by the author, in order to undertake complex control room designs quickly and accurately. This Guide does not replace more detailed and textual HF Guidance such as DefStan 00-250 (Ref 1) and other standards, but it does enable a grasp of the key HF ‘rules-of-thumb’ in order that a busy project team can get on with the design quickly and hit the ground running within the realistic constraints of a ‘design advice needed now’ commercial and military working environment.

The scope of the Guide makes it applicable to all but the most specialised control rooms. It does not cover, for example, medical operating theatres or precision engineering manufacturing plants although it could easily be adapted to do so with sufficient Subject Matter Expertise (SME) input. It covers the spatial and Human-computer Interface (HCI) aspects of those rapid reaction control rooms typified by teams of civil or military personnel striving for maximum efficiency in information management, safety and mission situational awareness. Thus it applies to control rooms used by Police, Fire, Ambulance or Coastguard personnel; chemical plants, industrial production plants, refineries, oil rigs, RN warships and submarines, Army and RAF tactical control rooms, tri-service and NATO battle command rooms, air traffic control rooms, etc.

The development and advances in technology have allowed plant and equipment monitoring and control to move away from local control panels. Instead of arrays of dedicated controls and displays, modern control rooms are tending

towards centralised remote control via flat screen multifunction displays, sometimes touch screen. However, some dedicated displays and controls should be retained for safety critical functions. This introduces new problems in that information, notably on overall situational awareness, is not readily available throughout the system. Easy-to-use screen navigation, together with easy-to-interpret screen information, is essential in order to maintain optimum system performance, enhanced safety, user comfort and reduced errors. Further, it is essential to determine what screen real estate (sometimes called glass area) will be required, early in the programme.