The e-Navigation process

1. The e-Navigation implementation should be a process of evolution rather than revolution. E-Navigation will progress incrementally and iteratively.

2. There is a need to consider the alignment between e-Navigation and other related initiatives such as e-Maritime. This could be achieved through harmonization and cooperation across these initiatives.

3. The IMO Strategy Implementation Plan should identify a method for testing the usability and effectiveness of new additional elements of e-Navigation in terms of operations, technical, regulatory aspects and training.

4. It is important to evolve core elements of e-Navigation, meeting common global needs before expanding to non-core applications.

Need for standards and regulations

5. Some e-Navigation elements, user driven, should be regulated
    while others should only be guided to the extent of design principles.

6. Standards are needed to ensure global compatibility. Regulations may be needed for core components of e-Navigation.

7. There is a compelling need to address the IMO, ITU, IEC processes for dealing with new developments and maintaining existing systems that are based on rapidly changing technology and evolving user needs.

Value of test beds

8. Test beds can contribute to the GAP analysis and subsequently provide useful input to the development of operational systems i.e. "closing the gap".

9. As users' needs and levels of training will vary, it needs to be recognized that test bed results from one region are not necessarily globally applicable. The challenge is to take this into account whilst seeking global solutions.

10. Existing standards and datastructures should be used in test beds, in particular S-100, in order to explore their suitability on a global scale.

11. A test bed driven approach to the development of e-Navigation is useful given similar test methodologies and evaluation criteria as well as proper dissemination of results.

Bridge solutions

12. An e-Navigation bridge environment should provide for value added applications guided by design principles rather than regulations to encourage innovation.

13. INS is a possible basis for the future development of on board e-Navigation. Use could be made of the IMO modular approach used in the INS performance standards.

14. INS could be a core platform on the bridge enabling the addition of specialized applications that may be required by specific users and in particular regions.

15. There is a need to start the process for INS carriage requirement. This should be a part of the e-Navigation strategy implementation plan.

User Centric

16. User centred design is important to ensure the success of e-Navigation both onboard and ashore . Attention should be paid to the operational context and procedures as well as technology.

17. It is important to inform, educate and work with users prior to and during test bed projects. In working with users, the ability to observe them and properly assess their needs is paramount.

Value of discussion forums

18. There are many pioneering activities apart from test beds that can contribute to e-Navigation. Events such as the e-Navigation Underway Conference are useful as forums for information exchange on such developments.

19. The wide range of participants and views expressed during the e-Navigation Underway Conference has shown the value of sharing test bed information and results.