Bridge Standardisation & Ergonomics

A Joint Meeting

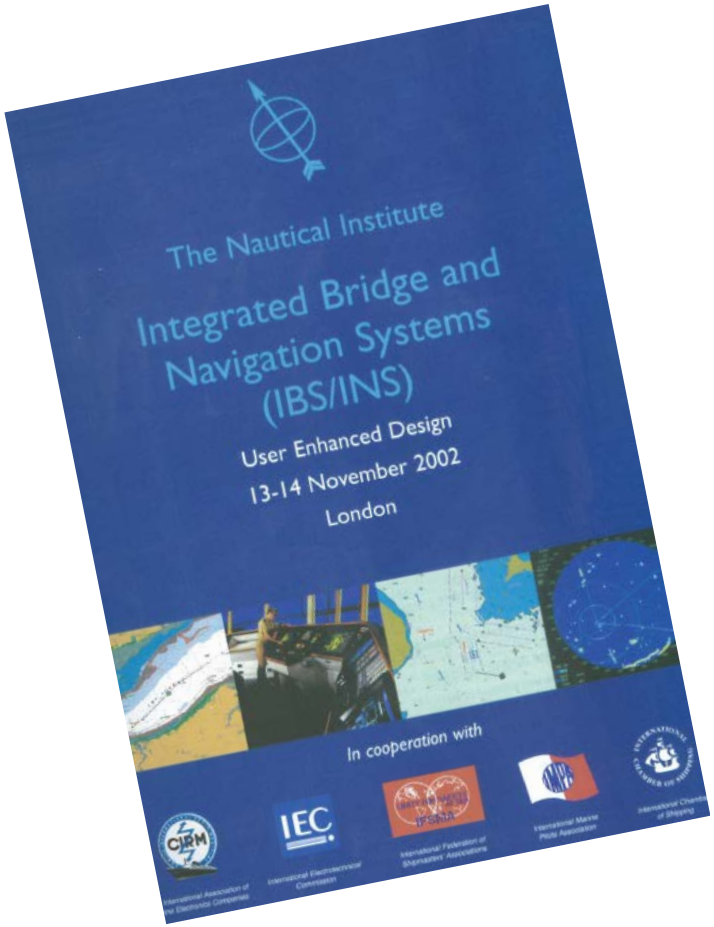
Evening Seminar

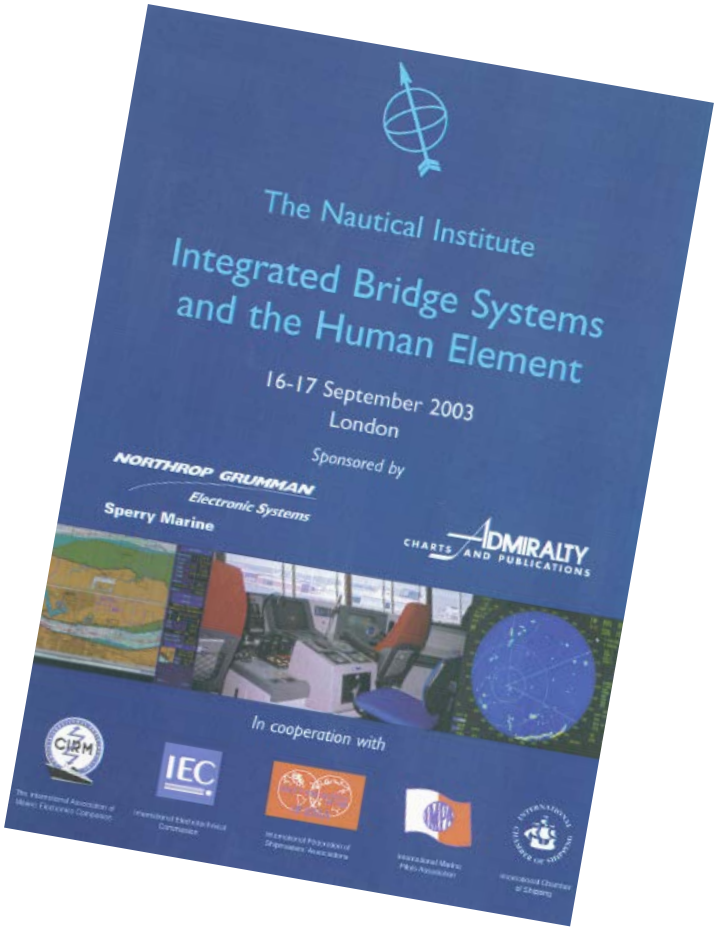
Nautical Institute London Branch

2 December 2013

David Patraiko, Director of Projects, The Nautical Institute

2002 – 2003


The Nautical Institute
Integrated Bridge and Navigation Systems (IBS/INS)
User Enhanced Design
13-14 November 2002
London
In cooperation with
IEC


The Nautical Institute
Integrated Bridge Systems and the Human Element
16-17 September 2003
London
Sponsored by
NORTHROP GRUMMAN
Electronic Systems
Sperry Marine
ADMIRALTY
CHARTS AND PUBLICATIONS
In cooperation with
IEC

eNavigation

- Commenced with IMO in 2006

- “e-Navigation is the harmonised collection, integration, exchange, presentation and analysis of marine information onboard and ashore by electronic means to enhance berth to berth navigation and related services for safety and security at sea and protection of the marine environment”

Compelling Need

There is a clear and compelling need to equip the master of a vessel and those ashore responsible for the safety of shipping with modern, proven tools to make maritime navigation and communications more reliable and user friendly and thereby reducing errors. However, if current technological advances continue without proper coordination there is a ***risk*** *that the future development of marine navigation systems will be hampered through a* ***lack of standardisation onboard and ashore****, incompatibility between vessels and an increased and unnecessary level of complexity.*

2008

INTERNATIONAL MARITIME ORGANIZATION

IMO

E

SUB-COMMITTEE ON SAFETY OF NAVIGATION
54th session
Agenda item 13

NAV 54/13/1
24 April 2008
Original: ENGLISH

DEVELOPMENT OF AN E-NAVIGATION STRATEGY

The concept of S-Mode for onboard navigation displays

2009

SUB-COMMITTEE ON SAFETY OF NAVIGATION
55th session
Agenda item 11

NAV 55/INF.8
19 May 2009
ENGLISH ONLY

DEVELOPMENT OF AN E-NAVIGATION STRATEGY IMPLEMENTATION PLAN

Mariner needs for e-navigation

Supporting material

User Need	Justification	Relation to IMO's Strategy for the development and implementation of e-navigation (section 8.2)	Issues to Consider
Standard Interface Mariners expressed a desire for greater standardization of functionality for navigation displays.	Navigation system functions and presentation (including ECDIS, Radar, AIS, GPS, etc.) can vary widely between manufacturers and even between models by a single manufacturer. The differences include where certain information is displayed (i.e. Speed and Course), how it is displayed, menu functions and interface devices such as knobs or joysticks. This makes type specific training difficult, and leads to ineffective use of features particularly by those watchstanders who are new to a vessel.	• Human Centred Presentation needs • Human Machine Interface • Analysis	• Design specification for current equipment • Note should be made of issues contained in the IBS guidelines • Note should be made of The Nautical Institute's concept of S-Mode • Need to establish balance between standardization and innovation • MSC/Circ.1091 on Issues to be considered when introducing new technology on board ship

Nav 55/INF.8

- Improved reliability
- Alarms
- Standard Interface
- Marine Safety Info (MSI)
- Guard Zones Automated reporting
- Automated updating of documents
- Improved target detection
- Improved Ergonomics
- Indication of reliability

2013 – Nav 59 Priorities

S1: improved, harmonized and user-friendly bridge design;

S2: means for standardized and automated reporting;

S3: improved reliability, resilience and integrity of bridge equipment and navigation information;

S4: integration and presentation of available information in graphical displays received via communication equipment; and

S9: improved Communication of VTS Service Portfolio[1].

Risk Control Options

- RCO 1: Integration of navigation information and equipment including improved software quality assurance.
- RCO 2: Bridge alert management
- RCO 3: Standardized mode(s) for navigation equipment
- RCO 7: Bridge and workstation layout standardization

Human Centred Design

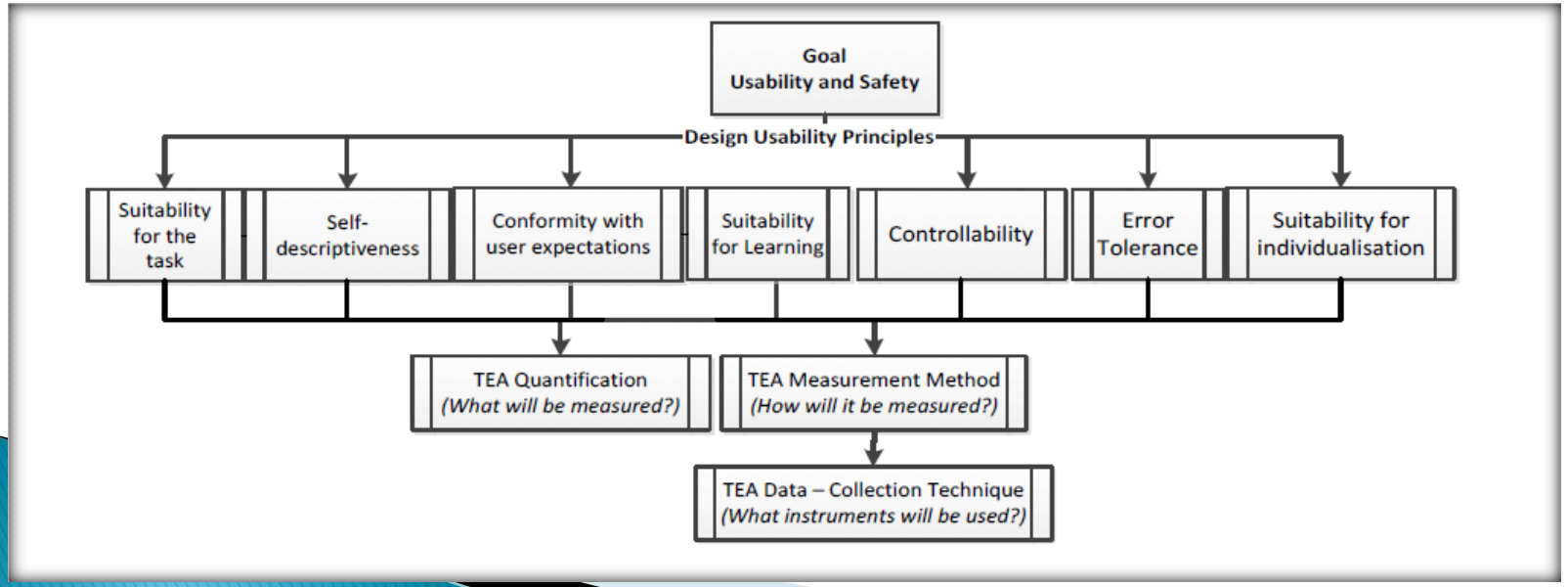
SUB-COMMITTEE ON SAFETY OF NAVIGATION
59th session
Agenda item 6

NAV 59/6/1
28 June 2013
Original: ENGLISH

DEVELOPMENT OF AN E-NAVIGATION STRATEGY IMPLEMENTATION PLAN

Design usability principles for e-navigation solutions and risk control options

Submitted by Australia



What now?

- Standardise ‘Familiarisation’?

Checklist

November 2012

Industry Recommendations for ECDIS Familiarisation

CIRM?

INTERTANKO InterManager MAIIF BIMCO OCIMF The Nautical Institute

GlobalME International Chamber of Shipping UNITY FOR SAFETY IFSMA ISF IGP&I

What now?

- Standardise ‘Familiarisation’?
- Develop S-Mode?
- Encourage ‘voluntary’ standardisation?
  - Common rules?
  - Compete on services?
- Explore ‘human centred design’?
- Explore ‘mandatory’ standardisation
  - Regulation vs. Market demand?
- Commercial monopoly?
- Where will we take eNavigation?

That's just Navigation…

- GMDSS / Communication
- Command & Control
- Shipboard alarms/alerts
- Cargo monitoring / control
- Stability
- Engineering monitoring / control
- Reports
- Training
- Planned maintenance / inventory control …

Support of The Nautical Institute through membership and participation is very much appreciated!

Thank You

The Nautical Institute
202 Lambeth Road, London SE1 7LQ, UK
www.nautinst.org