

A UK Voluntary Code of Practice for Unmanned Surface Vessels

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**UK Marine
Industries
Alliance**

A Bit of Background - UK MASRWG



The UK Maritime Autonomous Systems Regulatory Working Group was formed to:

- ❖ **Formulate a regulatory framework that could be adopted by the UK and other States as well as the international bodies charged with the responsibility to regulate marine resources and maritime domain.**
- ❖ **Develop Codes of Conduct and Practice for the safe operation of MAS.**
- ❖ **Members include :**
 - ❖ **Government (e.g. UK Maritime and Coastguard Agency and Hydrographic Office)**
 - ❖ **NGOs (e.g. Lloyds Register, International Association of Institutes of Navigation and IMarEST)**
 - ❖ **Inter-Governmental Organisations (e.g. Safety and Regulations for European Unmanned Maritime Systems (SARUMS));**
 - ❖ **Commercial organisations**
 - ❖ **Academic Institutions**
- ❖ **The regulatory framework covers the following key aspects:**
 - ❖ **Compliance with key maritime and marine treaties, where identified and appropriate;**
 - ❖ **Safety;**
 - ❖ **Environmental protection compliance; and**
 - ❖ **Compliance with UNCLOS via the IMO instruments.**

This time last year.....

Presented on the likely style and content of the Code of Practice

❖ Two major takeaways - “equivalence” and “reassurance”

Equivalence - meaning that equivalence to existing codes and standards would be used to demonstrate compliance

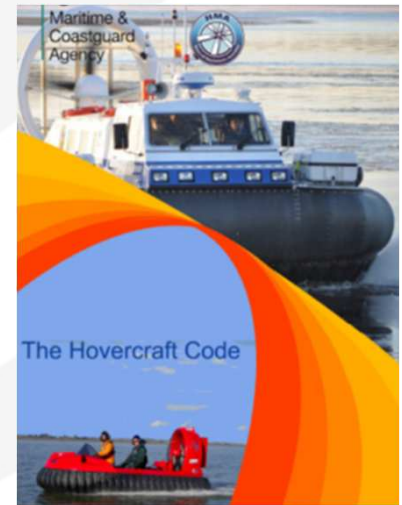
Reassurance - meaning that all marine users would need to feel comfortable with how the Code of Practice appeared – as well as content

Principles

We debated (at some length!) fundamental principles required for a Code of Practice

- ❖ **No reinvention of the wheel**
- ❖ **Use existing code structures (CoP23, LY3, WB Code) where possible**
- ❖ **Goal-Basing vs Prescriptive**
- ❖ **Systems Eng vs Plain English**

Decision was to follow style of existing Codes (eg LY3, CoP23, Workboat Code, MGN280), incorporating Goal-Based elements where appropriate



Approach

Equivalence studies had just completed last year

- ❖ **Consisted of clause by clause reviews of major maritime instruments**
 - ❖ **Can Clause be applied without amendment?**
 - ❖ **Is intent of clause applicable to MASS?**
 - ❖ **High-level view of requirements for compliance/equivalence?**

Chapter definition slightly refined from that proposed last year

- ❖ **Draft document chapters agreed and populated by various group members**
- ❖ **Resultant draft document reviewed in correspondence through several iterations**

Content

1	FOREWORD
2	DEFINITIONS
3	APPLICATION
4	OPERATIONS
5	VESSEL DESIGN AND MANUFACTURE STANDARDS
6	NAVIGATION LIGHTS, SHAPES & SOUND SIGNALS
7	SITUATIONAL AWARENESS AND CONTROL
8	COMMUNICATIONS SYSTEMS
9	BASE CONTROL STATION OPERATION
10	SYSTEM INTEGRITY CERTIFICATION AND TEST PROCEDURES
11	OPERATOR STANDARDS OF TRAINING, COMPETENCE AND WATCHKEEPING
12	REGISTRATION, CERTIFICATION, EXAMINATION, MAINTENANCE AND RECORD-KEEPING
13	SAFETY MANAGEMENT
14	SECURITY
15	PREVENTION OF POLLUTION
16	CARRIAGE AND TRANSFER OF CARGOES (INCLUDING DANGEROUS GOODS)
17	RENDERING OF ASSISTANCE TO PERSONS IN DISTRESS AT SEA
18	SALVAGE AND TOWAGE
19	GLOSSARY

COLREGS

SOLAS

STCW

ISM

ISPS

MARPOL

IMDG

New Concepts

Classes of vessel

- ❖ **Ultralight, light, small, high-speed, large**

Recognised terms/roles

- ❖ **Primarily to assign responsibility to organisation / role to allow equivalence with existing instruments and codes**

Risk Assessments

- ❖ **Use of goal-basing to enable design of vessel and its proposed operations to demonstrate acceptable safety levels**
- ❖ **Primarily applies to design and construction of vessel and Situational Awareness systems**

Where to next?

IMO now considering unmanned ships (scoping exercise)

Activity increasing globally

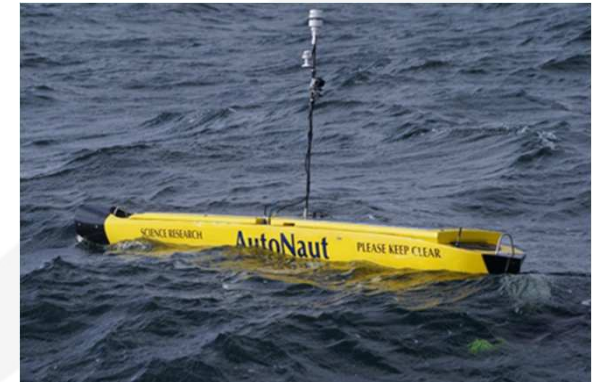
This is a starting point, not an end

Need to use the CoP and similar (eg UMS Design Code) in anger

Identify issues – and address

❖ **Registration**

❖ **Demonstration**



Registration

Registration is required to undertake contracts in some countries

- ❖ UK SR preferred, but work may be needed on ease of registration
- ❖ UK SSR or Type Approval are other options, but not what originally conceived for

Need to distinguish between registration & identification

- ❖ IMO number applicable >100GT / 300 GT
- ❖ MIC an option, but aimed at RCD compliance

Most MASS at this point will fall below thresholds for registration and IMO number

Registration / approval of the entire system (inc operators) may be necessary and is allowed for in Chapter 12

Demonstration Areas



Chapter 10 of the code makes specific reference to system and sensor test and demonstrations

Existing areas around UK of varying capability and accessibility

Work commencing to establish exactly what is required

❖ Size, coverage, traffic density (or otherwise!)

What the Code is (and what it is not)

The CoP is :

- ❖ **Voluntary and applicable to vessels <24m Length**
- ❖ **A re-use / read across of existing codes, no invention of new regulations**

The CoP is not :

- ❖ **The end state or definitive**
- ❖ **Statutory regulation**

Please – use it, help us improve it for the next edition



BEING A RESPONSIBLE INDUSTRY

An Industry Code of Practice

A Voluntary Code
Version 1.0
November 2017

Maritime Autonomous Surface Ships
up to and including 24 metres in length

