



An Investigation into Trust and Reputation Frameworks for
Autonomous Underwater Vehicles

Thesis submitted in accordance with the requirements of
the University of Liverpool for the degree of Doctor in Philosophy by

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Notations

The following notations and abbreviations are found throughout this thesis:

Preface

This thesis is primarily my own work. The sources of other materials are identified.

Abstract

As Autonomous underwater vehicles (AUVs) become technically more competent, and fiscally more attainable, their use has been applied to a great many areas within defence, commercial and environmental areas of concern. Increasingly, these applications are tending towards utilising independent collective behaviour of teams or fleets of these platforms.

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Chapter 1

Introduction

Chapter 2

Background on Trust and its Applications to MANETs

Chapter 3

Background on Maritime Uses of Autonomous Systems and the Maritime Communications Environment

Chapter 4

Trust in Autonomous Systems of Systems for Maritime Defence Applications

Chapter 5

Strategies for Multi-Domain Trust Assessment

Chapter 6

Modelling and Analysis of Collaborative Node Kinematic Behaviuors in Underwater Acoustic MANETs

Chapter 7

Comparative Analysis of Multi-Comain Trust Assessment in Collaborative Marine MANETs

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