
THE ROYAL INSTITUTE OF NAVIGATION

Aims and Objects

The objects of the Institute are to unite in one body those who are concerned with or who are interested in navigation and to further its development. Navigation is conceived as applying to locomotion of all kinds and is perceived as encompassing aspects of: command and control, psychology and zoology, operational research, risk analysis, theoretical physics, operation in hostile environments, instrumentation, ergonomics, financial planning and law as well as electronics, astronomy, mathematics, cartography and other subjects traditionally associated with navigation.

The aims of the Institute are to encourage the creation and dissemination of knowledge through research and development, to co-ordinate information from all the disciplines involved, to provide a forum in which new ideas and new products can have the benefit of informed and professional scrutiny and to further education and communication.

The Institute initiates conferences and symposia on specific subjects and has a programme of meetings at which lectures are given and discussed. There are standing Special Interest Groups (SIGs), which keep under constant review pertinent aspects of navigation. The success of these Special Interest Groups is crucially dependent on the active involvement of members.

The SIGs include: Land Navigation and Location Group (LN&L), General Aviation Navigation Group (GANG), History of Air Navigation Group (HANG), Civil and Military Air Group (CMAG), Marine Traffic & Navigation Group (MT&NG), Small Craft Group (SCG), eLORAN Group (eLORAN), Space Group (Space), Animal Navigation Group (ANG) and Research & Development Group (R&D).

The Institute publishes *The Journal of Navigation* six times a year. It contains papers which have been presented at meetings, other original papers and selected papers and reports from Special Interest Groups. The Institute also publishes *Navigation News* six times a year which contains a full account of the Institute's proceedings and activities. This includes Branch News, a record of current navigational work, a diary of events, topical articles, news about Membership and advertising. A great deal of the Institute's work is international in character and is co-ordinated with that of similar organizations in other countries.

Membership

There are nine classes of membership under which individuals or organisations may apply to join the Institute. Details of the various membership criteria and current subscriptions are available on the RIN website (Home / Join the RIN / Membership Types <http://www.rin.org.uk/general.aspx?ID=59>) and from the Membership Secretary (membership@rin.org.uk Tel: +44(0)20 7591 3130 Fax: 44(0)20 7591 3131).

- (1) Ordinary Membership
- (2) Associate Membership
- (3) Associate Fellow Membership
- (4) Student Membership
- (5) Junior Associate Membership
- (6) Corporate Membership
- (7) Small Business Membership
- (8) Affiliate College University Membership
- (9) Affiliate Club Membership

Additional membership classes of Fellowship, Honorary Fellowship, Retired Membership and Affiliate Membership also exist and details are available from the Membership Secretary.

The subscription price (excluding VAT) to *The Journal* (ISSN 0373-4633) for Volume 67, 2014, which includes print and electronic access, is £446 (USA, Canada and Mexico US \$822) and includes delivery by air; single parts are available at £123 (USA, Canada and Mexico US \$218) plus postage. The electronic-only price available to institutional subscribers is £353 (USA, Canada and Mexico US \$643). EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. The *Journal* is issued free to all Members of the Institute. Orders, which must be accompanied by payment, may be sent to any bookseller or subscription agent or direct to the publishers: Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 8RU, or in the USA, Canada and Mexico to Cambridge University Press, Journals Fulfillment Department, 100 Brook Hill Drive, West Nyack, New York 10994-2133. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan.

© 2014 The Royal Institute of Navigation

THE JOURNAL OF NAVIGATION

VOLUME 67 NUMBER 6 NOVEMBER 2014

CONTENTS

- A Pedestrian Navigation System Based on Low Cost IMU** 929
Yan Li and Jianguo Jack Wang
- SVM-based Models for Mobile Users' Initial Position Determination** 950
Majda Petric, Aleksandar Neskovic, Natasa Neskovic and Milos Borenovic
- GPS/INS/Odometer Integrated System Using Fuzzy Neural Network for Land Vehicle Navigation Applications** 967
Zengke Li, Jian Wang, Binghao Li, Jingxiang Gao and Xinglong Tan
- A New Simplified Selection Algorithm of the Guide Star Catalogue for a Star Sensor** 984
Xinlu Li, Jinhua Yang, Liu Zhang, Shuang Li and Guang Jin
- ADS-B System Failure Modes and Models** 995
Busyairah Syd Ali, Washington Ochieng, Amab Majumdar, Wolfgang Schuster and Thiam Kian Chiew
- New Characteristics of Geometric Dilution of Precision (GDOP) for Multi-GNSS Constellations** 1018
Yunlong Teng and Jinling Wang
- A New Approach for Optimising GNSS Positioning Performance in Harsh Observation Environments** 1029
Shuguo Pan, Xiaolin Meng, Wang Gao, Shengli Wang and Alan Dodson
- Generating 3D Depiction for a Future ECDIS Based on Digital Earth** 1049
Tao Liu, Depeng Zhao and Mingyang Pan
- The Compensation Effects of Gyros' Stochastic Errors in a Rotational Inertial Navigation System** 1069
Pin Lv, Jizhou Lai, Jianye Liu and Mengxin Nie
- Implementation Technology for Localising a Group of Mobile Nodes in a Mobile Wireless Sensor Network** 1089
Seong Yun Cho
- First Preliminary Fast Static Ambiguity Resolution Results of Medium-Baseline with Triple-Frequency Beidou Wavebands** 1109
Shengyue Ji, Xiaolong Wang, Ying Xu, Zhenjie Wang, Wu Chen and Hui Liu

Cambridge Journals Online

For further information about this journal
please go to the journal website at:
journals.cambridge.org/nav



MIX
Paper from
responsible sources
FSC® C007785

CAMBRIDGE
UNIVERSITY PRESS