

Preface

Sensing and Control for Autonomous Vehicles: Applications to Land, Water and Air Vehicles contains a collection of contributions presented at an invited workshop with the same name held June 20–22, 2017 in Ålesund, Norway.

The subject of the book is sensing and control with applications to autonomous vehicles. Guidance, navigation and motion control systems for autonomous vehicles are increasingly important in land-based, marine and aerial operations. Autonomous underwater vehicles may be used for pipeline inspection, light-intervention work, underwater survey, and collection of oceanographic/biological data. Autonomous aerial and ground vehicles can be used in a large number of applications such as inspection, monitoring, data collection, surveillance, etc. At present, vehicles operate with limited autonomy and intelligence. There is a growing interest for cooperative and coordinated multi-vehicle systems, localization and mapping, path planning, robust autonomous navigation systems, and robust autonomous control of vehicles. Unmanned vehicles with high levels of autonomy may be used for safe and efficient collection of environmental data, for assimilation of climate and environmental models and to complement global satellite systems.

With an appropriate balance between mathematical theory and practical applications, academic and industrial researchers working on sensing and control engineering aspects of autonomous vehicles will benefit from this comprehensive book. It is also suitable for final year undergraduates and postgraduates, lecturers, development officers, and practitioners in the areas of guidance, navigation and control of autonomous vehicles.

Acknowledgements

We are grateful to our sponsors:

- Center for Autonomous Marine Operations and Systems (NTNU AMOS) at the Norwegian University of Science and Technology, Trondheim, Norway (Norwegian Research Council grant no. 223254).
- Rolls-Royce Marine, Alesund, Norway

Trondheim, Norway
Trondheim, Norway
Eindhoven, The Netherlands

Thor I. Fossen
Kristin Y. Pettersen
Henk Nijmeijer

Sensing and Control for Autonomous Vehicles

Applications to Land, Water and Air Vehicles

Fossen, T.I.; Pettersen, K.Y.; Nijmeijer, H. (Eds.)

2017, IX, 518 p. 212 illus., 170 illus. in color., Hardcover

ISBN: 978-3-319-55371-9