

BUILD **ADVANCED AERIAL ROBOTS**  
USING **OPEN-SOURCE TOOLS**  
@ **NAVSTIK HANDS-ON WORKSHOP**



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[workshop.navstik.org/#contact-us](http://workshop.navstik.org/#contact-us)



The details of the workshop are:

**Title: 2-Day Hands-on Workshop on Building Advanced Autonomous Aerial Robots**

**Description:**

NavStik announces the first hands-on autopilot workshop in Pune. The objective of the workshop is to familiarise the participants with modern open-source tools that can be deployed for building advanced autonomous aerial robots. This will enable researchers/developers follow the best practices and jumpstart their work. The “hands-on” nature of the workshop will ensure that the participants get first-hand exposure to configuring, programming and building advanced autonomous aerial robots.

**Venue: Venture Center**

**Dates: 9th and 10th May 2014**

**Time: 9:30 AM to 5 PM**

For more details, please visit: <http://workshop.navstik.org>

## Workshop Overview

Want to figure out how advanced autopilots work?

Want to learn Open-source Tools for building UAVs?

Want to build and configure aerial robots with experts?

NavStik announces the first hands-on autopilot workshop in Pune. Starting from the basics, the workshop will take the participants through the hardware and software details of NavStik advanced open-source autopilot system, including advanced concepts, such as, multi-threaded real-time operating systems, applications for navigation and control, integrating the hardware and software of autopilots with the aerial robot, telemetry, tuning the gains and flight-testing.

The objective of the workshop is to familiarise the participants with modern open-source tools that can be deployed for building advanced autonomous aerial robots. This will enable researchers/developers follow the best practices and jumpstart their work. The “hands-on” nature of the workshop will make sure that the participants get first-hand exposure to configuring, programming and building advanced autonomous aerial robots.

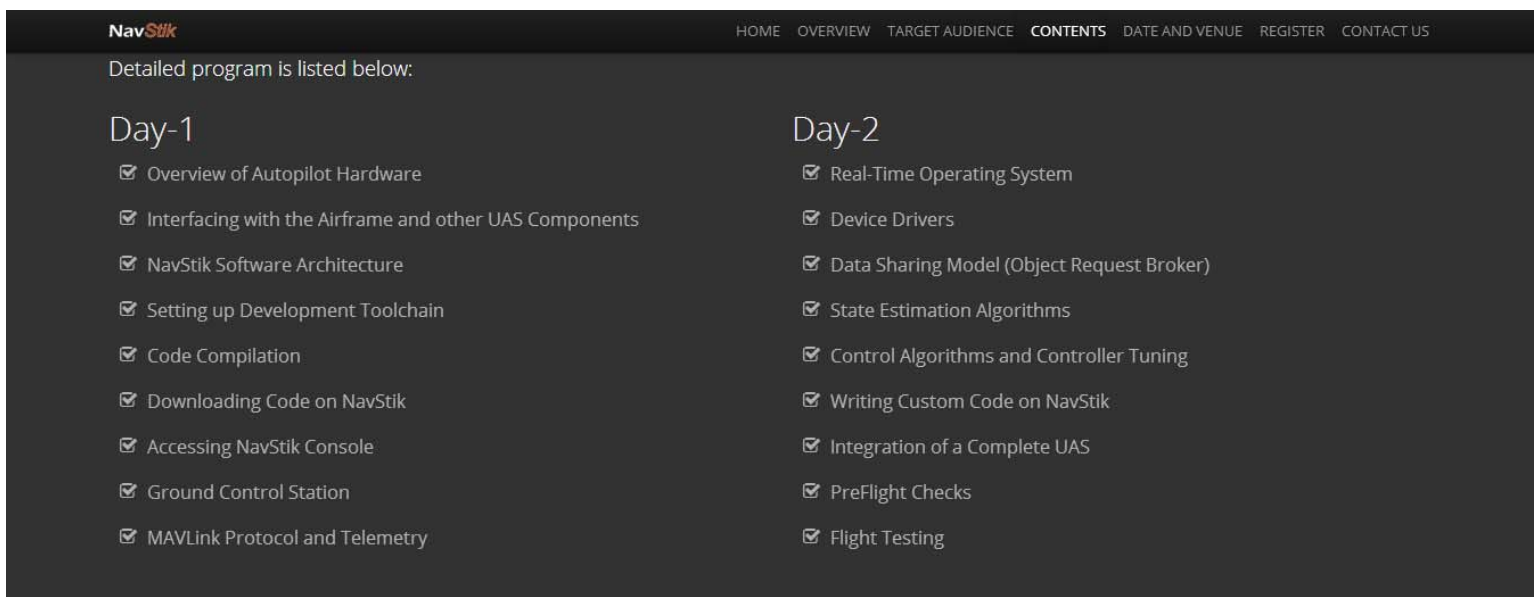
## Who is it for

This workshop is intended for professionals and researchers working on implementation of **advanced autonomous mobile robots**, particularly, **aerial robots**. It will enable them to make effective use of **advanced open-source tools** to build the systems of their interest, better and faster!

## Workshop Contents

The workshop is spread over two days. The first day will focus on the hardware architectures, setting up the development toolchain, programming the autopilot, working with the ground-control-station, and related concepts. Second day would delve into details of the software architecture, autopilot algorithms, writing custom real-time applications, setting up the complete autonomous aerial robot, and flight testing.

The participants would be expected to come with their laptops (windows/linux). The complete software toolchain will be installed and configured on their systems. The autopilot hardware and aerial robots will also be made available during the workshop to familiarise the participants with programming the hardware and integrating an autonomous aerial robot. Flight session of autonomous aerial robots would also be conducted during the workshop.



The screenshot shows a dark-themed website for NavStik. At the top left is the NavStik logo. At the top right is a navigation menu with links: HOME, OVERVIEW, TARGET AUDIENCE, CONTENTS, DATE AND VENUE, REGISTER, and CONTACT US. Below the navigation, the text "Detailed program is listed below:" is displayed. The content is organized into two columns: Day-1 and Day-2. Each day has a list of topics, each preceded by a checked checkbox icon.

NavStik

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Detailed program is listed below:

**Day-1**

- Overview of Autopilot Hardware
- Interfacing with the Airframe and other UAS Components
- NavStik Software Architecture
- Setting up Development Toolchain
- Code Compilation
- Downloading Code on NavStik
- Accessing NavStik Console
- Ground Control Station
- MAVLink Protocol and Telemetry

**Day-2**

- Real-Time Operating System
- Device Drivers
- Data Sharing Model (Object Request Broker)
- State Estimation Algorithms
- Control Algorithms and Controller Tuning
- Writing Custom Code on NavStik
- Integration of a Complete UAS
- PreFlight Checks
- Flight Testing