Committee F45:
AGVs & Beyond

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ASTM Committee F45

Driverless Automatic Guided Industrial Vehicles

- Established in 2014
  - 5 technical Subcommittees

- ASTM F45 Committee Members

- 9 ASTM Approved Standards

- 5 Work Items

- Monthly WebEx Meetings

- Biannual face-to-face meetings

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# Committee Membership

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ASTM F45 Committee Accomplishments

Published Standards

1. F3200  Standard Terminology for Driverless Automatic Guided Industrial Vehicles
2. F3218  Standard Practice for Documenting Environmental Conditions for Utilization with A-UGV Test Methods
3. F3243  Standard Practice for Implementing Communications Impairments on A-UGV Systems
5. F3265  Standard Test Method for Grid-Video Obstacle Measurement
6. F3327  Standard Practice for Recording the A-UGV Test Configuration
7. F3381  Standard Practice for Describing Stationary Obstacles Utilized within A-UGV Test Methods

Work Items

1. Performance Testing of an A-UGV Under Varied Communication Conditions
3. Combining A-UGV Standards
4. Describing Moving Obstacles Utilized within A-UGV Test Methods
5. Set of Objects used with A-UGVs
F45 Evolution: Areas of Focus (back to the beginning)

Industry 4.0 related issues
- Artificial Intelligence (AI)
- Augmented Reality (AR)
- Virtual Reality (VR)
  - virtual worlds
  - Cobots
  - digital modeling
- Robotics
- Automation
- Autonomous personal and commercial transport
- Smart infrastructure
  - (i.e., buildings, roads, rails, bridges, water, power, cyber, waste, and physical/virtual security).
Steps taken in evolutionary process

- Discussion with Committee Leadership
- Ballot to Main Committee to Approve Revised Title, Scope and Bylaws (March 2021)
- Submission of revised title, scope and bylaws to Tech Ops and COTCO for Approval (March 2021)
- Board Approval of Board Recommendation (April 2021)
- Committee Rollout Event (June 2021)
2. SCOPE

The scope of the committee shall be the development of standards for industrial/commercial robotics, automation, and autonomous systems (i.e.: terminology, practices, classifications, guides, test methods, and specifications). These standards are applicable to, but not limited to, automatic/automated/autonomous vehicles, robotic arms/manipulators, and the sensors used in these systems; for smart infrastructures, advanced manufacturing, logistics and other automation.

The Committee will encourage research in this field and sponsor symposia, workshops, and publications to facilitate the development of such standards. The work of this Committee will be coordinated with other ASTM technical committees and other national and international organizations having mutual or related interests.
NEW - ASTM Committee F45
Robotics, Automation and Autonomous Systems

At-present Committee Breakdown – Standards Development Topics

- **F45 Division I – Driverless Vehicles**
  - **F45.10 Driverless Vehicles - Environmental Effects**
    - F3218-19 Standard Practice for Documenting Environmental Conditions for Utilization with A-UGV Test Methods
  - **F45.11 Driverless Vehicles - Docking and Navigation**
    - F3499-21 Standard Test Method for Confirming the Docking Performance of A-UGVs
  - **F45.12 Driverless Vehicles - Object Detection and Protection**
    - F3265-17 Standard Test Method for Grid-Video Obstacle Measurement
    - F3381-19 Standard Practice for Describing Stationary Obstacles Utilized within A-UGV Test Methods
  - **F45.13 Driverless Vehicles - Communication and Integration**

- **F45 Division II – Smart Infrastructures**
  - F45.21 Smart Infrastructure – Buildings
  - F45.22 Smart Infrastructure – …

- **F45 Division III – Advanced Manufacturing**
  - F45.30 Advanced Manufacturing – …

- **F45 Division IV – Logistics**
  - F45.40 Logistics – …

- **F45 Division V – Sensors**
  - F45.50 Sensors – …
Thank you

Interested in getting involved?
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