



U.S. Department
of Transportation
**Federal Railroad
Administration**



OFFICE OF RESEARCH DEVELOPMENT & TECHNOLOGY
FRA OFFICE OF RAILROAD POLICY & DEVELOPMENT

Federal Railroad Administration

Recent Activities – Unmanned Aerial Systems

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Moving America Forward

FRA – Office of Research, Development, and Technology

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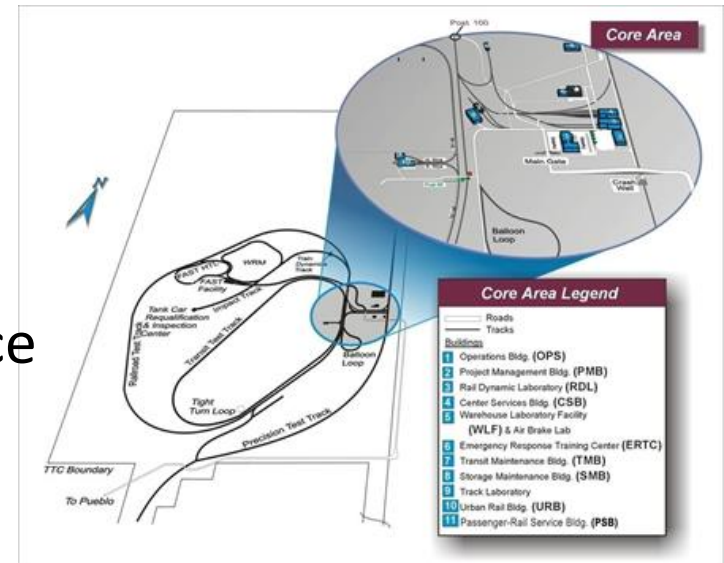
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Mission and Focus

- FRA Mission:
 - “...enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future.”
- R&D Focus:
 - Automated/autonomous inspection technologies
 - ATGMS: <https://www.fra.dot.gov/eLib/details/L19312>
- Safety Focus:
 - Promote and regulate safety
 - Field personnel, tools, automated technologies (<https://www.fra.dot.gov/Page/P0120>)
- What role will UAS play in FRA’s future?

UAS at FRA

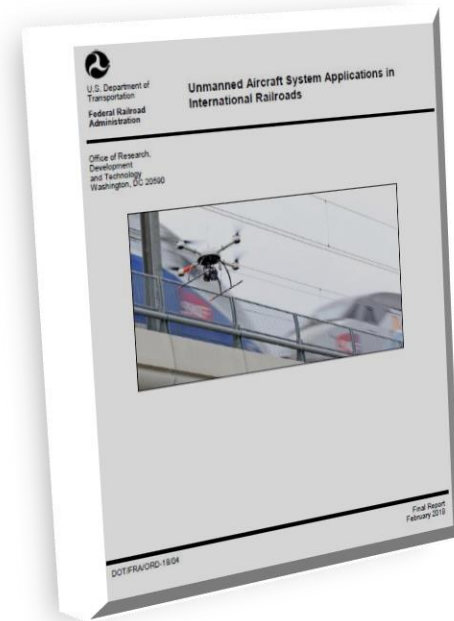
- FRA UAV Working Group
 - Stay informed
 - Anticipate needs
 - Work with FAA and RRs to advance technology
- Enable Railroad-based UAV Research:
 - DOT's Transportation Technology Center (Colorado)
 - <https://www.fra.dot.gov/eLib/Details/L18669>
 - Inspection and 1st responders
 - TTCI – Section 333 exemption



International Railroads

- FRA Benchmarking Study
 - Europe, Asia
 - Similar use cases – bridges, security
 - Regulatory environment more difficult
 - BVLOS and data processing are keys to technology growth
 - US is a leader in UAS deployment in rail industry
 - FAA support has been critical to success
 - FRA report:

<https://www.fra.dot.gov/eLib/Details/L19380>



UAS at FRA

- Active research – trespasser prevention
 - Field research on trespass detection and deterrent technologies (Brunswick, ME PD)
 - High risk areas
 - Fixed camera system primary
 - Testing UAV feasibility



Looking forward

- Phase 1 SBIR: UAV-based change detection imaging technology
- Possible FRA/Industry UAV summit this year to identify use cases, target regulatory changes, and develop research targets
 - UAVs will impact FRA safety and research activities
- Perceptions:
 - Aircraft: evolving quickly
 - Payloads: imaging, LiDAR dominate
 - Analysis software: playing catch-up

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