Federal Railroad Administration
Recent Activities – Unmanned Aerial Systems

Frank A. Frey, Gen. Engineer
Office of Railroad Safety
Highway-Rail Crossing Div.
Washington, D.C. 20590
frank.frey@dot.gov
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](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