NRRA Intelligent Construction Technologies (ICT) Team

The NRRA ICT team is comprised of technical experts in the area of intelligent construction technologies (ICT). ICT includes innovative technologies for planning, design, construction, real-time quality control/monitoring, and management for the lifecycle of infrastructure construction. The ICT team's activities include: short-term and long-term research, field evaluation and/or demonstration of current and emerging technologies, partnering with industry to assist with development and deployment of technologies, creation of tools and resources to assist with deployment efforts, technology transfer among NRRA partners, specification development and providing input to the technology transfer team on what should be marketed.

The focus of the ICT team is the application and advancement of current and emerging ICT. These technologies include, but are not limited to: non-destructive testing (e.g., ground penetrating radar, acoustics and ultrasonic technologies, traffic speed deflection measuring systems, photogrammetric and infrared imaging, etc.); LiDAR, unmanned aerial systems and other high precision survey systems; intelligent compaction; paver mounted thermal profiling; automated machine guidance (e.g., excavation, milling, paving, drilling, etc.); automated machine control; building information modeling for pavements; data standards, exchange and management; visualization methods and 3D printing for pavements; artificial intelligence/deep learning, and e-construction (e.g., e-ticketing, etc.).

The goal of the ICT team is to foster understanding and optimal use of ICT through:
- Identification of gaps of current construction practices and technologies
- Evaluation of recent research and emerging ICT
- Construction of test sections, or identification of locations/projects, that can be used to validate (or further develop) a given ICT
- Information sharing (e.g., lessons learned, best practices, etc.)
- Advancement of ICT and data analysis methods
- Creation of tools and resources to assist with deployment and training efforts
- Development and refinement of ICT-related standards

The ICT members include:
- equipment manufacturers and vendors
- highway construction contractors
- federal and state agencies (currently active or interested in the use of one or more ICT)
- researchers and academia
- consultants