NCHRP 20-68A
“US Domestic Scan Program”

Scan 13-02 Advances In Civil Integrated Management (CIM)

Scan Team Visits 2014

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• This scan is being conducted as a part of NCHRP Project 20-68A, the U.S. Domestic Scan program
• The program was requested by the American Association of State Highway and Transportation Officials (AASHTO), with funding provided through the National Cooperative Highway Research Program (NCHRP)
• Each scan is selected by AASHTO and the NCHRP 20-68A Project Panel
• Each scan addresses a single technical topic of broad interest to many state departments of transportation and other agencies

Scan 13-02 Advances in Civil Integrated Management (CIM)
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Note: Dr. Jahren is engaged in a personal consulting contract for this activity; Iowa State University is not involved with this effort.
Scan Team Members’ Home States
Scan Host States

The map highlights the states of Texas (TX), Utah (UT), and Virginia (VA) as Scan Host States.
Examine projects that utilize civil integrated management (CIM) technologies and partnering efforts between State DOT’s, consultants, contractors, and material suppliers.
The scan team hopes to document (panel guidance):

- Identified proven intelligent construction technologies
- Construction project performance measures being used
- Successful partnering techniques including virtual meetings, wireless data sharing, and paperless communication as applicable.

Specific Topics of Interest
• Civil Integrated Management refers to the collection, organization, managed accessibility, and use of accurate data and information throughout the life cycle of a transportation asset
Civil Integrated Management
Categories of Findings

- Technical considerations
- Organizational considerations
- Procedures for successful implementation
- Philosophies for success
- Ways to enlist support
Findings

• Foundational/Enabling concepts
• Enabling technologies
• Contributing technologies
• Benefits/Business drivers
• Next steps

Summary of Findings
• Data Warehouse
• Promotion of innovation
• Business drives IT
• Enable users to obtain needed information
• Employ model based design as a starting point
• Think beyond next customer
• Strong geospatial foundation / investments in NSRS
• Common exchange language
• Information modeling
• Large IT Investment
• Collaboration with Industry Partners

Foundational / Enabling concepts
Enabling technologies

• GIS
• 3D Engineered Models
• GPS
• AMG/AMC
• Mobile devices
• Electronic Document Management Systems
• ICS/AMC/AMG
• Crowd sourced data collection
• Connected site (mobile computing)
• 4D/5D (schedule and cost dimensions)
• Single source of truth elevates transparency
• Promote synergistic collaboration
• Faster project execution
• Reduction of change orders
• Duplicate data collection reduced
• Legacy system enabled
• Improved O&M
• B/C
Scan Team will develop a report:
• Document “Findings” and “Conclusions”
• Include a Dissemination Plan
• Provide recommended next steps
• Host states will review and approve their state’s info prior to finalizing and publishing.

The results of this scan will provide input to a new research project approved by the AASHTO Standing Committee on Research, NCHRP 10-96, “Guide for Civil Integrated Management (CIM) in Departments of Transportation”