History of IRIS

- IRIS development began with in-house staff starting in the late 1990s
- Developed system internally
  - Had internal programming staff already
  - Wanted to avoid significant initial and ongoing costs associated with commercial packages
  - Ability to add functionality based on user needs
  - Focused on open source OS (Linux) and ancillary programs to keep cost low
- Needed to support NTCIP compliance for DMS
- Started with DMS deployment capabilities and expanded from there
MnDOT Deployments

- Twin Cities Metro
- Duluth
- Rochester
IRIS Capabilities

• Type of Equipment (Twin Cities)
  – Dynamic Message Signs (184)
  – Ramp Meters (441)
  – Lane Control Signals (300)
  – Camera viewing and control (600)
  – Traffic Sensors (5800)
  – Gate Arms (29)
  – MnPASS Toll Reader/Antennas (Future)
  – RWIS (CALTRANS)
IRIS Capabilities

• Algorithms
  – Ramp Metering
    • Simple Plan (Time-of-Day)
    • Real-time Adaptive Ramp Metering
  – Variable Speed Limits
  – Travel Times
  – MnPASS HOT Lane Pricing Algorithm (Future)
  – Automated Warning Systems (CALTRANS)
    • Speed
    • Visibility
    • Wind
IRIS Capabilities

• Dynamic Message Signs
  – Sign Plans
    • Can develop plans that can be deployed manual or on a set schedule
    • Used for construction or PSA messages
  – Auto-Deployments
    • Current auto-deploys ILCS messages based on incident location data
    • Developing auto-deploys for DMS
IRIS Capabilities

• Configurable
  – Can be done by user, does not require programmer
  – Modification of Roadway System for map
  – Internal configuration of devices
IRIS Capabilities

• Utilizes Open Source Software
  – Open Street Maps
  – PostgreSQL Database
  – Java
IRIS Capabilities

• Integration with other systems
  – DMS Activations
    • WZRD System - Automatic DMS activation for warning of active snow plowing ahead
    • ABC Parking Garage Status
    • Travel Time Messages (Chandler, AZ)
  – Incident Data
    • Imported from State Patrol Computer Aided Dispatch system
  – Traffic Sensor Data
    • Shared with MnPASS System
    • Shared via XML to external partners
General Public License

• Other states have requested IRIS
• Do not have the necessary resources
• Need to have more backup support for IRIS that others using it can provide
• Gain from others experience and enhancements
• Not appropriate mission to sell IRIS to others
Other Deployments

• Deployed
  – CALTRANS
  – Chandler, AZ

• In Progress
  – Wyoming
  – Nebraska
  – Bloomington, MN
IRIS Resources

Webpages

• [http://iris.dot.state.mn.us](http://iris.dot.state.mn.us)

Contacts

• Jim Kranig – james.kranig@state.mn.us
• Brian Kary – brian.kary@state.mn.us