Mn/DOT IRIS Software

National Rural ITS Conference
Anchorage, Alaska

September 3-5, 2008

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Presentation Outline

• Overview of IRIS

• Reason for sharing IRIS

• General Public License approach

• Current status
IRIS Background

• IRIS is Mn/DOT’s Freeway Management System control software

• IRIS development began in the late 1990s:
  – In preparation for moving to the new center
  – To move to NTCIP standards
  – To support the increased number of field devices
  – To take advantage of the open source operating systems and programs to eliminate significant ongoing licensing costs
  – To lower the cost of computer hardware resources
IRIS Main Features

• Control of DMS (messages and travel times)
• Central control of ramp meters (input from about 5400 detectors)
• Control of cameras
• Control of lane control signals
• Delivery of data to MnPass HOT lanes
Dynamic Message Signs
Ramp Meters
Cameras
Lane Control Signals
IRIS Development & Ownership

• Developed entirely by Mn/DOT staff

• Utilizes General Public License (GPL) operating system

• Utilizes General Public License (GPL) open source utility software
Reason to Share IRIS

- IRIS is reliable and well developed traffic management / traveler information software
- Other states have requested IRIS
- Increase number of software developers familiar with IRIS (lower risks)
- Share costs of ongoing developments and enhancements
- Speed development of features
- Benefit from outside perspective and ideas on development
Risks of Sharing IRIS

• Protect Mn/DOT from warranty or damage claims
• Protect from demands on Mn/DOT staff time
• Protect Mn/DOT from potential limitation of future use
• Protect Mn/DOT from limitations on further development of IRIS
Software License Options Considered

- **Proprietary:** Circulation for use, but not for modifying/enhancing

- **Public Domain:** No control over the future

- **GPL:** Free as in free to circulation (not price)
  - freedom to run
  - freedom to study
  - freedom to improve
  - freedom to redistribute
GPL Software License Selected

- **GPL (General Public License)**
  - Not Public Domain
  - Copyrighted
  - Copylefted (preserves freedoms in all later releases)
  - Typically an ongoing act of verifying any changes meet license requirements
Status of IRIS Sharing

• Caltrans has contracted with the Advanced Highway Maintenance & Construction Technology (AHMCT) Research Center at the University of California, Davis, to evaluate the feasibility of implementing IRIS.
• IRIS has been set up and is capable of running the traffic management system in Stockton District (10).
• Development work is continuing to tailor IRIS to Stockton’s needs.
Status of IRIS Sharing

- WisDOT contracted an assessment of the feasibility of the implementation of IRIS for their statewide TMC
- WisDOT is planning a test installation
- Other states have expressed interest
The Vision

• Mn/DOT releases IRIS as GPL
• Invite other states to share in development
• Form a revenue-neutral program to recoup costs of validating/managing software
• Mn/DOT seeks to form this group with commitments before releasing the GPL
• GPL release will increase the software programmers familiar with IRIS
Questions