



Mn/DOT IRIS Software

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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

IRIS: User = kary1bri (Kary, Brian)

File View Help

DMS Incident Camera

Selected Dynamic Message Sign

ID: V36W03 Camera: []

Location: T.H.36 WB @ Edgerton St Brightness: 18

Operation: None

CRASH
WEST OF 35E
ON LEFT SHOULDER

Page 1 Page 2

CRASH Duration: Indefinite

WEST OF 35E

ON LEFT SHOULDER

Send Clear

DMS Status Summary

- Available: 92
- Unavailable: 1
- Deployed: 1
- Failed: 1
- Travel Time: 14
- Inactive: 12

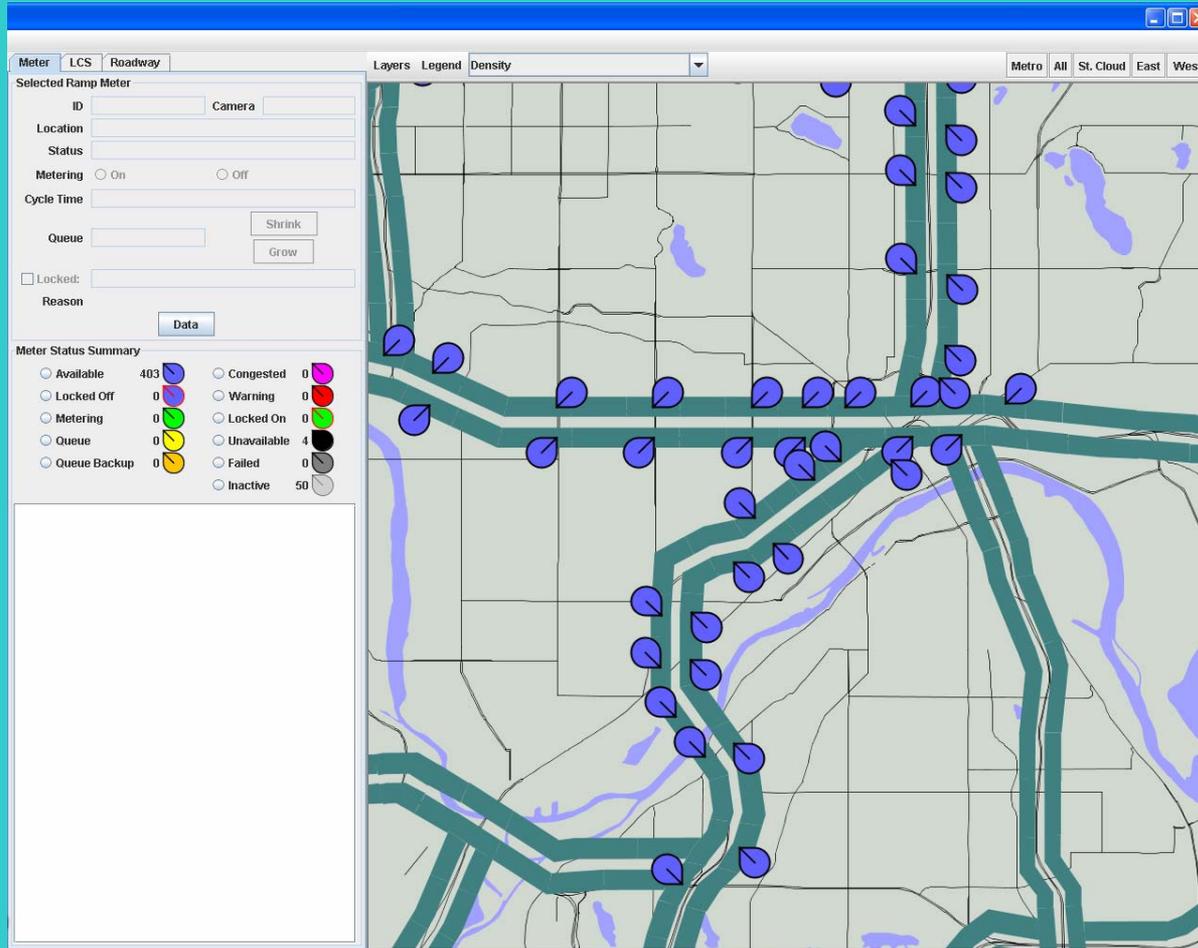
DMS status: Deployed

V36W03 koob1tom
T.H.36 WB @ Edgerton St
CRASH
WEST OF 35E
ON LEFT SHOULDER
D-08:50 E-XXXX

Tuesday, November 13, 2007

start Novell GroupWise - M... Day - RCA PRODUCTION - ... SIMPTECH (F:) IRIS: User = kary1bri... Microsoft PowerPoint ... 9:05 AM

Ramp Meters



Cameras

The screenshot displays the IRIS software interface. At the top, the title bar reads "IRIS: User = kary1bri (Kary, Brian)". Below this is a menu bar with "File", "View", and "Help". The main interface is divided into several sections:

- Selected Camera:** Shows "ID: C631" and "Location: I-35W SB @ Johnson St". Below this is a live video feed from the camera, timestamped "Tue Nov 13 09:06:59 2007".
- Camera Status Summary:** Displays "Active 200" and "Inactive 302".
- Map:** A large map of a city area with various colored overlays (green, yellow, red, blue) and camera icons. A white circle highlights a specific camera location on the map.
- Bottom Panel:** A taskbar showing the Windows Start button and several open applications: "Novell GroupWise - M...", "Day -", "RCA PRODUCTION - ...", "SIMPTech (F-)", "IRIS: User = kary1bri...", and "Microsoft PowerPoint...". The system clock shows "9:08 AM".

Lane Control Signals

The screenshot displays a software interface for managing Lane Control Signals (LCS). The interface is divided into several sections:

- Control Panel (Left):**
 - Buttons: Meter, **LCS**, Roadway
 - Selected Lane Control Signal: ID, Camera
 - Location: [Text Field]
 - Operation: [Text Field]
 - Signal Matrix:

	✗	✗	✗	✗	
L	↓	↓	↓	↓	R
	↓	↓	↓	↓	
 - Buttons: Send, Clear
- Signal Lists (Bottom Left):**
 - Westbound:**
 - L94W1 - @ 1st Ave: [Signal Status]
 - L94W2 - @ LaSalle Ave: [Signal Status]
 - L94W3 - @ Groveland Ave: [Signal Status]
 - L94W4 - E of Tunnel Entrance: [Signal Status]
 - L94W5 - @ Tunnel Entrance: [Signal Status]
 - Eastbound:**
 - L94E2 - W of Tunnel Entrance: [Signal Status]
 - L94E3 - @ Tunnel Entrance: [Signal Status]
- Map (Right):** A map showing a road network with blue square markers indicating the locations of the 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