Crash Injury Research & Engineering Network (CIREN)

Office of Human-Centered Research NHTSA

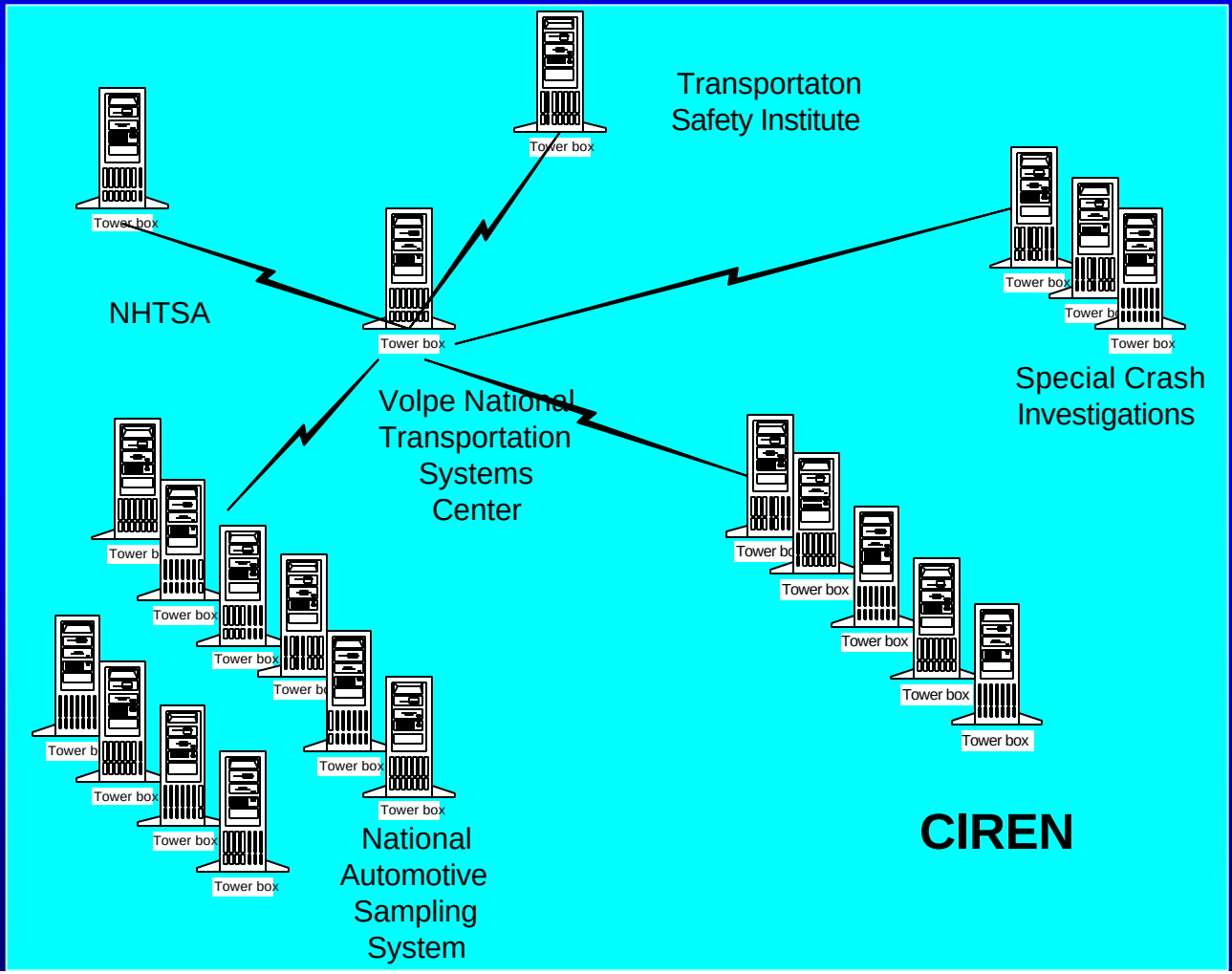
CIREN History

- Started in May 1996
- Electronic database started in August 1999
- Substantial funding has been expended
- Infrastructure is in place, built on NASS
- Program expansion
- New partners (Mercedes, Ford)
- Started education and outreach

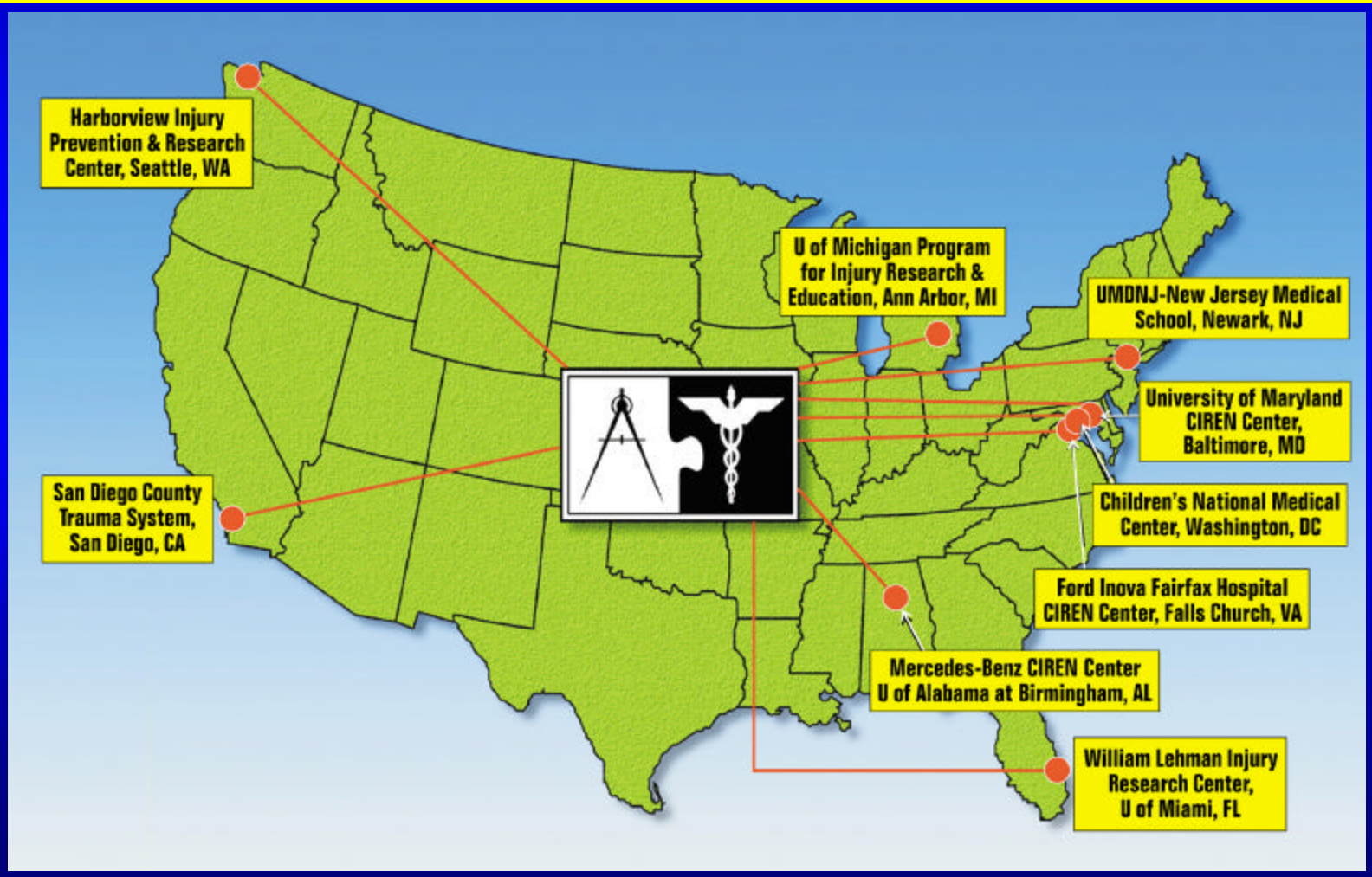
CIREN Now

- Increased visibility of program
- Hardware & software installation complete
- Collaborative efforts among centers
- CIREN conference & quarterly meeting attendance
- Papers - Medical & Engineering

CIREN Wide Area Network



CIREN System



Database System

- Crash data model
- Medical data model

Crash Data Model

- **Standardized**
  - CIREN
  - NASS
  - SCI
  - GES
- **Over 650 data elements collected**

Crash Data Collection

Scene Diagram

Vehicle Crush Profiles

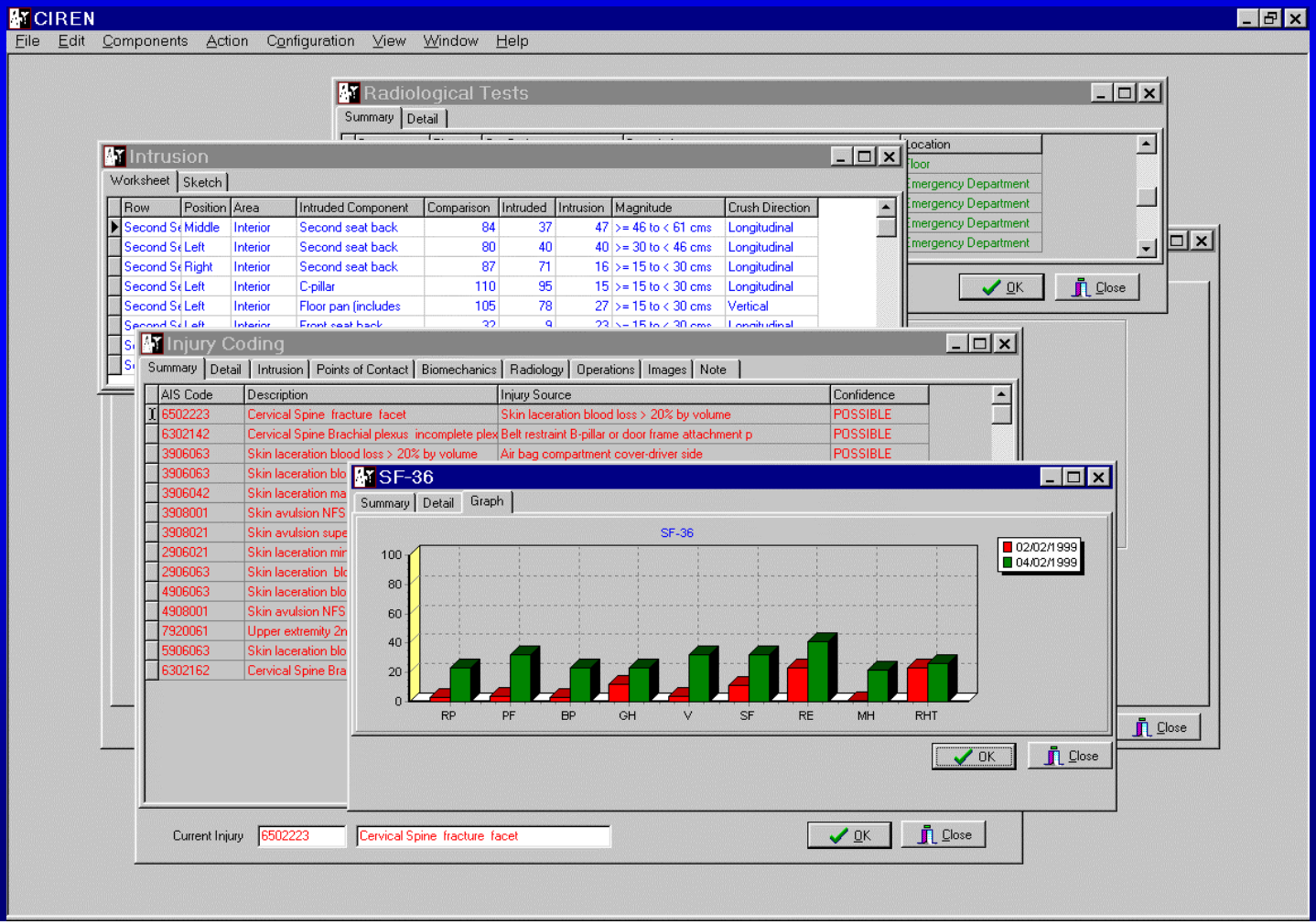
Medical Data Model

- **Standardized across all CIREN centers**
- **Common data elements (over 250 elements)**
  - Comorbidity
  - Complications
  - GCS scores
  - Invasive and non invasive procedures
  - Radiological tests
  - AIS injury coding
  - Costs

Medical Data Collection

LEFT ANKLE FRACTURE

Medical-Crash-Biomechanics



Central Repository

- **60 Gigabytes per year**
- **Optical juke box storage**
- **Images**
  - Crash photos
  - Sketches
  - X-rays
  - Sanitized patient photos

CIREN Capabilities

- Common comparable elements
- Rapid data exchange
- Cross-center expertise
- Links surgeons, crash experts, and engineers
- Electronic rounds

Future CIREN

- Maintain momentum
- System enhancements (Phase II)
- Continued growth/new partners
- Expand education and outreach
- Make a difference