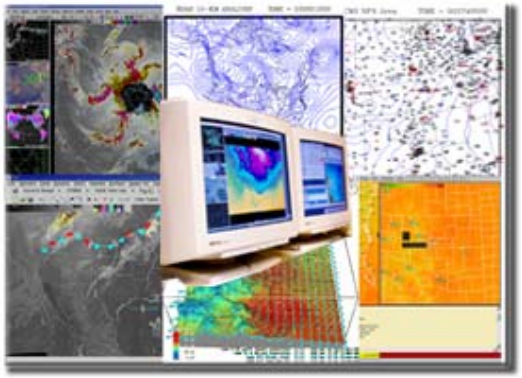
Supporting Real-Time Forecast & Warning Operations



Carl Bullock

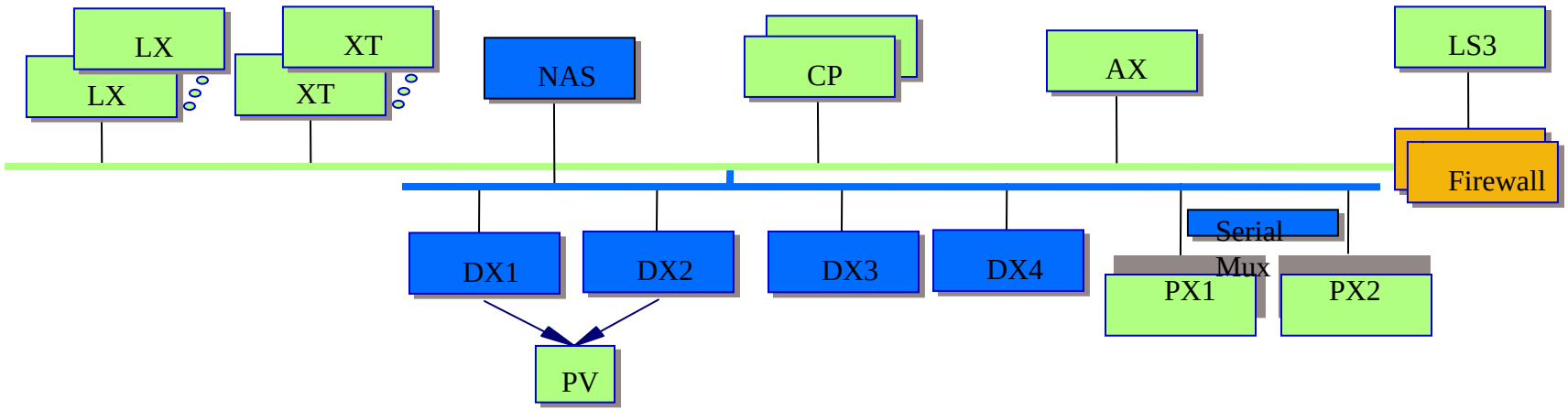
Background

- Program for Regional Observing and Forecast Services (PROFS) established 1979
  - Prototype improvements in warning services
  - Utilize latest technologies
- Prototype Iterations:
  - Real Time experiments 1982, 1983, 1985
  - DAR^{3}E & II (1986, 1989)
  - preAWIPS (Norman) (1991)
- Results guided AWIPS development

Key Technology Components

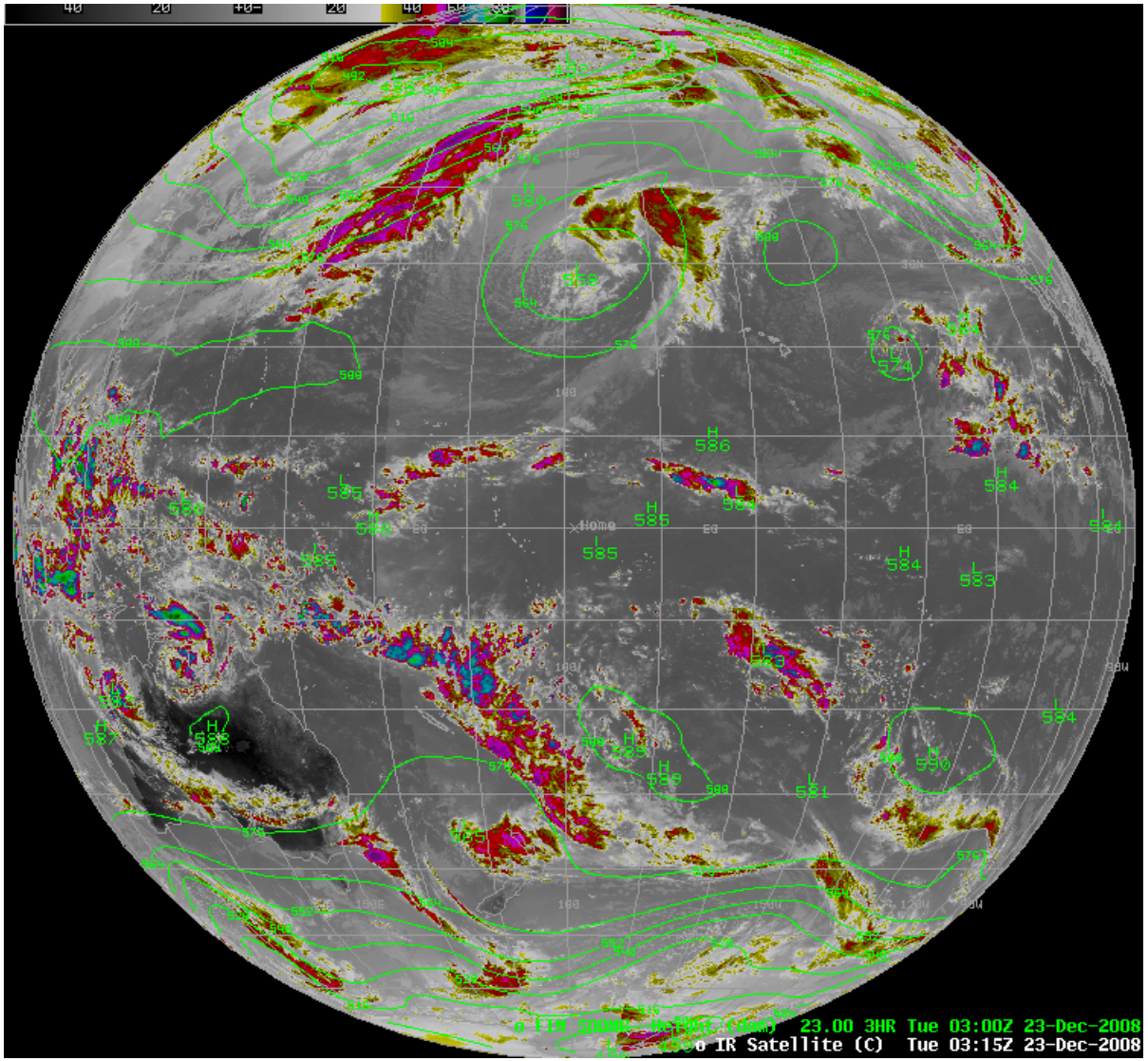
- New GOES satellite
- ASOS (Automated Surface Observing System)
- Doppler Radar (WSR-88D)
- Next Generation NWP Models
- AWIPS (Advanced Weather Interactive Processing System)

AWIPS Architecture

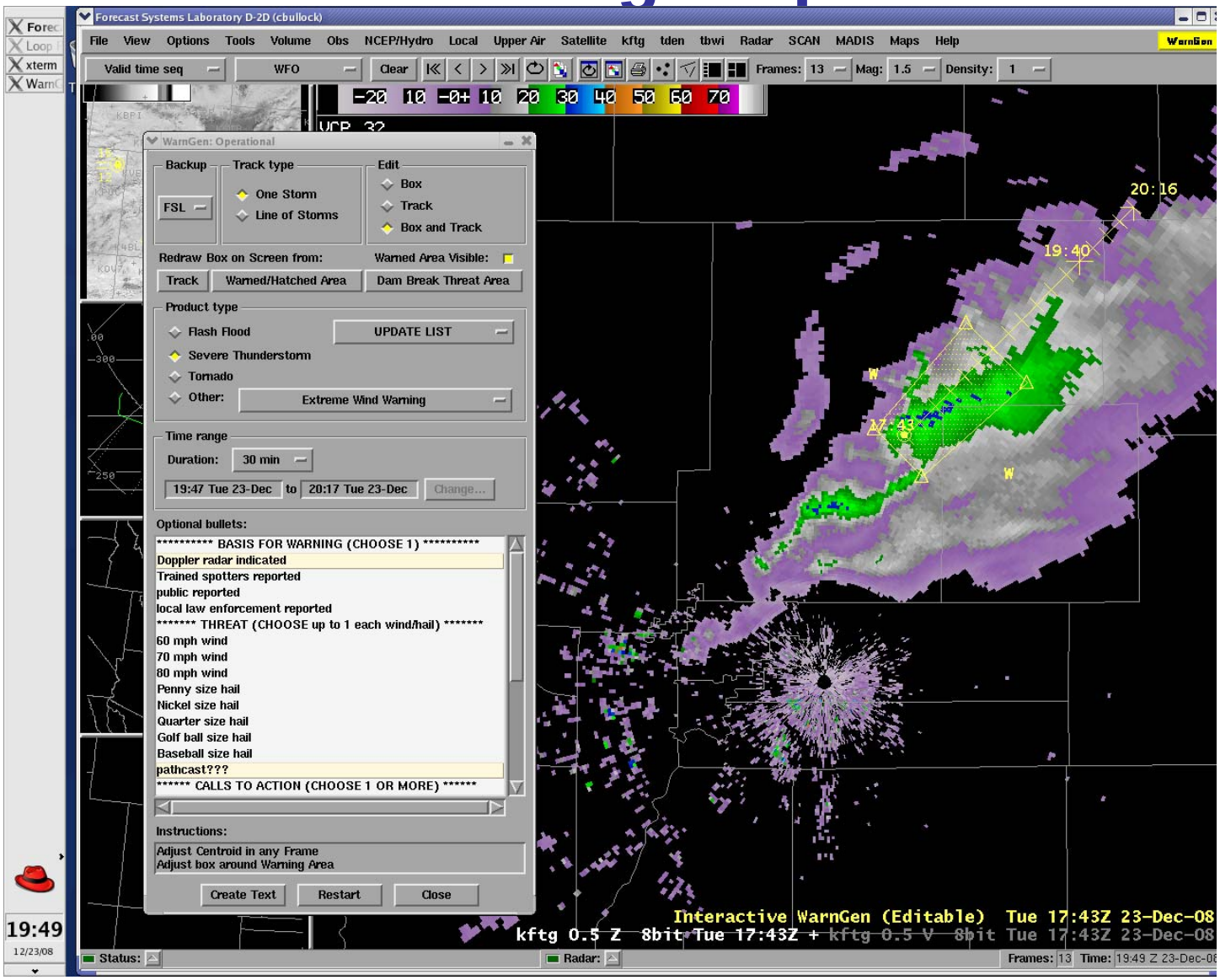


AWIPS Workstation

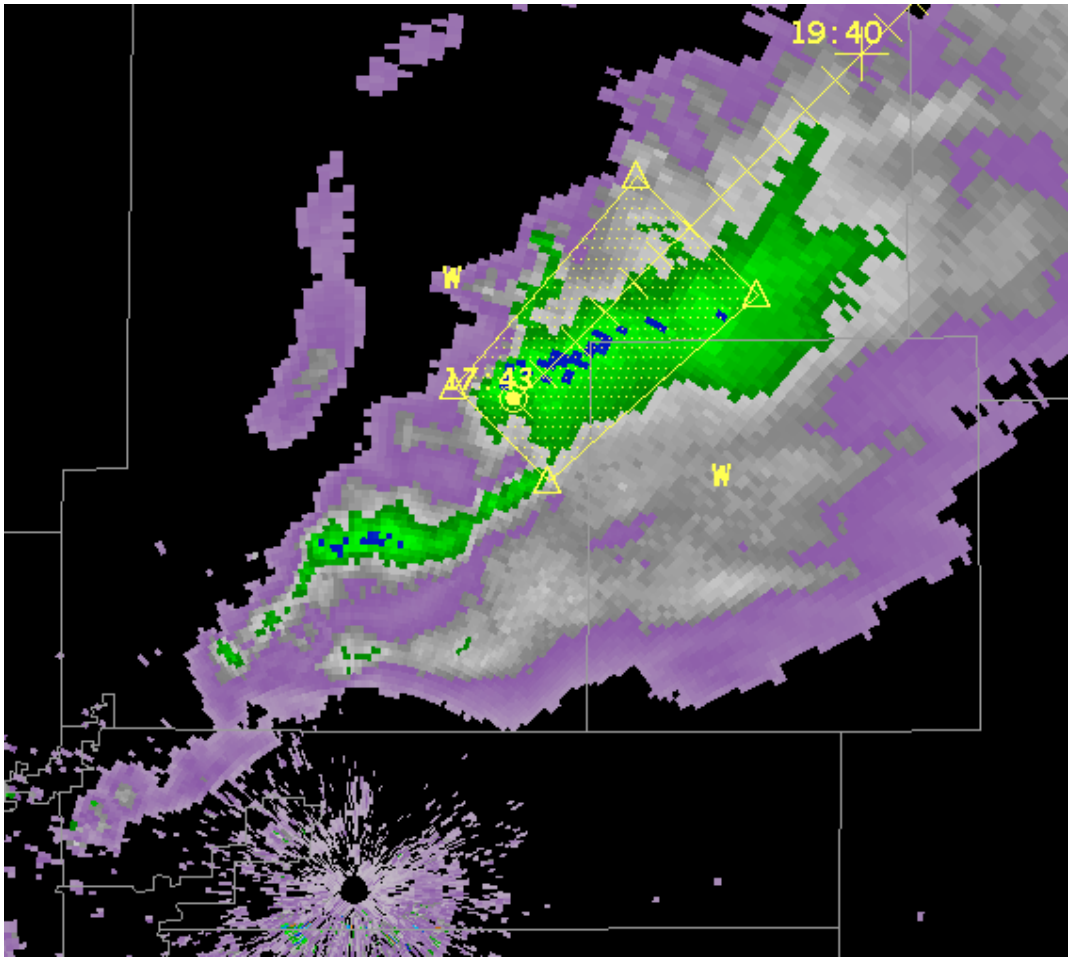
AWIPS display



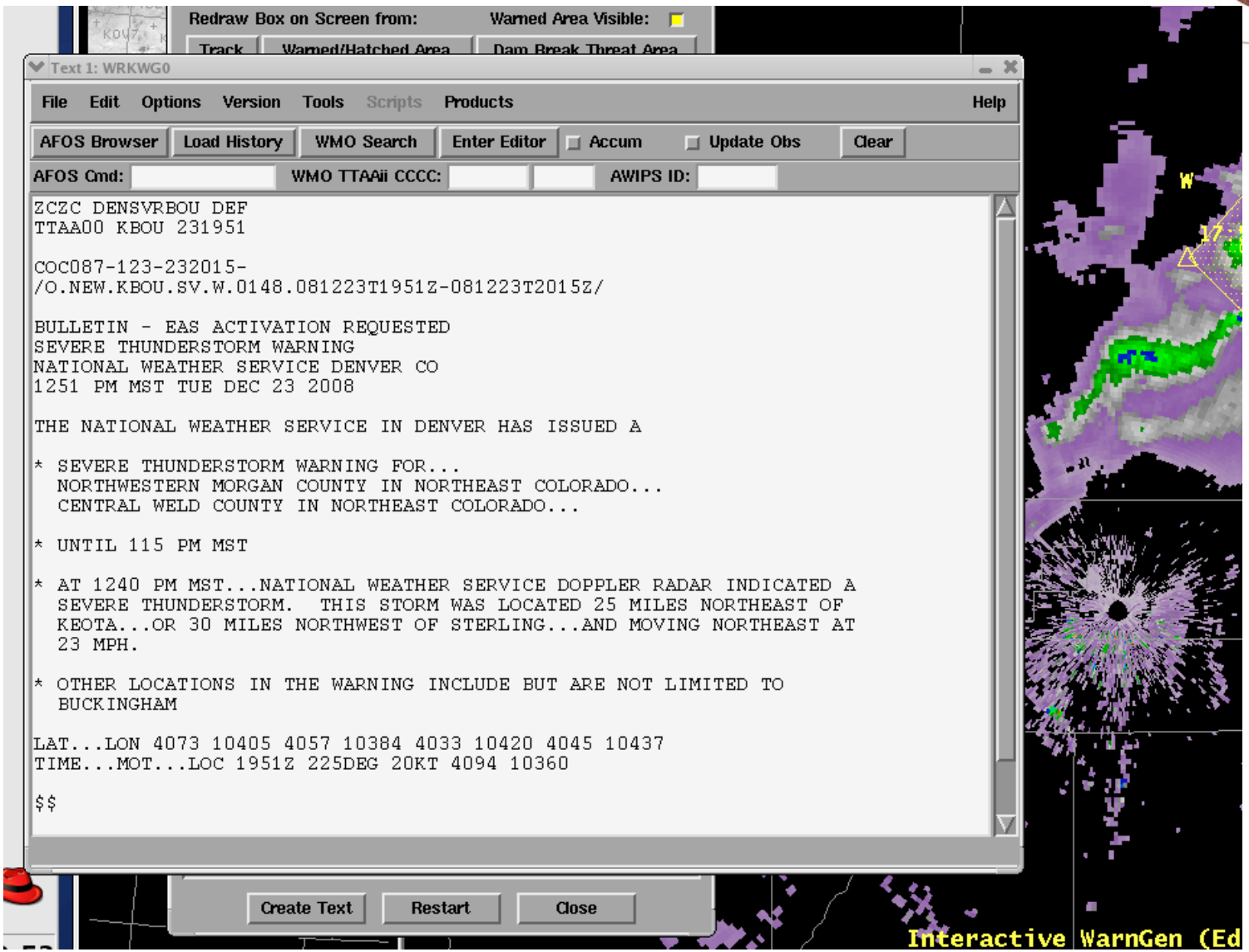
AWIPS - Warning Sequence



AWIPS - Warning Sequence



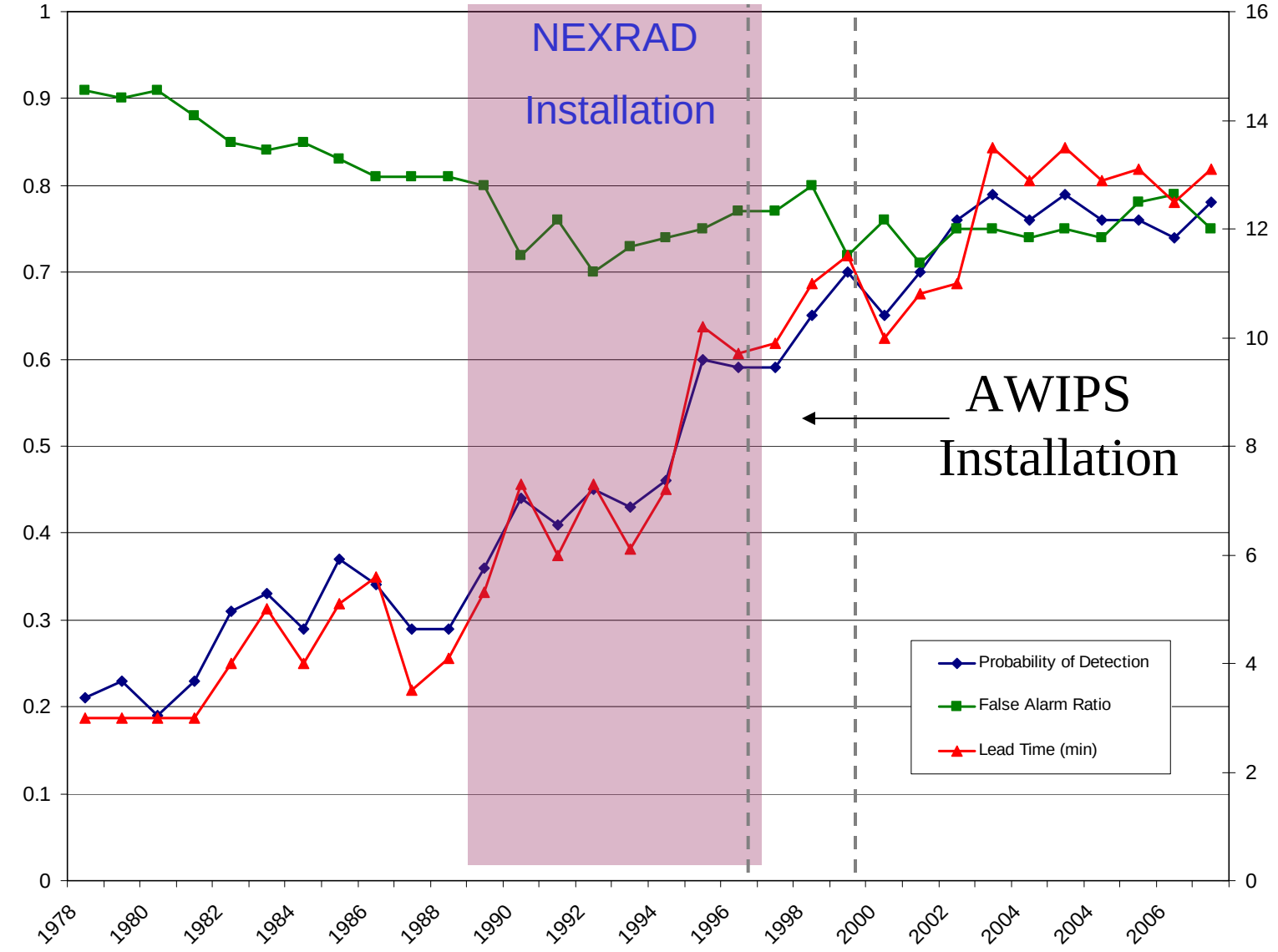
AWIPS - Warning Sequence



Improvements

- Oklahoma City Tornado Case May 3 1999
  - Good lead time on all warnings (up to 1 hour)
  - Doppler radar and AWIPS were key
  - 44 deaths
  - Emergency managers estimated 400+ deaths for similar outbreak in past
- NWS overall
  - Over 300,000 warnings past 10 years
  - Performance has significantly improved

NWS Tornado Warning Skill Scores



AWIPS Spinoffs

- FX-net - Prototype thin client
  - Used for fire weather & some universities
- FX-Collaborate
  - NWS, FAA, DHS
- GFE - Taiwan, Australia, private industry
- ALPS - Advanced version of AWIPS
  - Current prototype platform
    - HMT, Probability