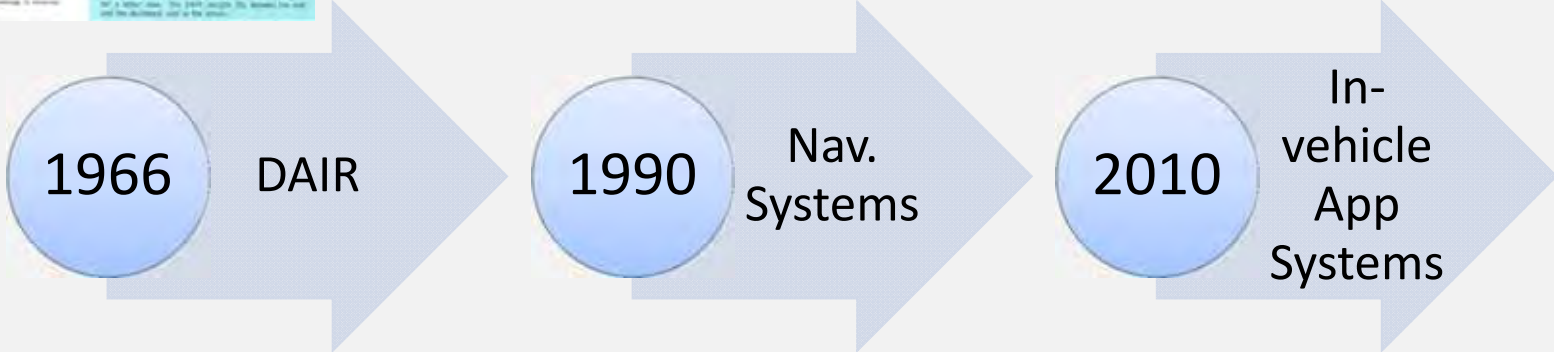


THE ROLE OF THE SIGNALIZED INTERSECTION IN THE CONNECTED WORLD

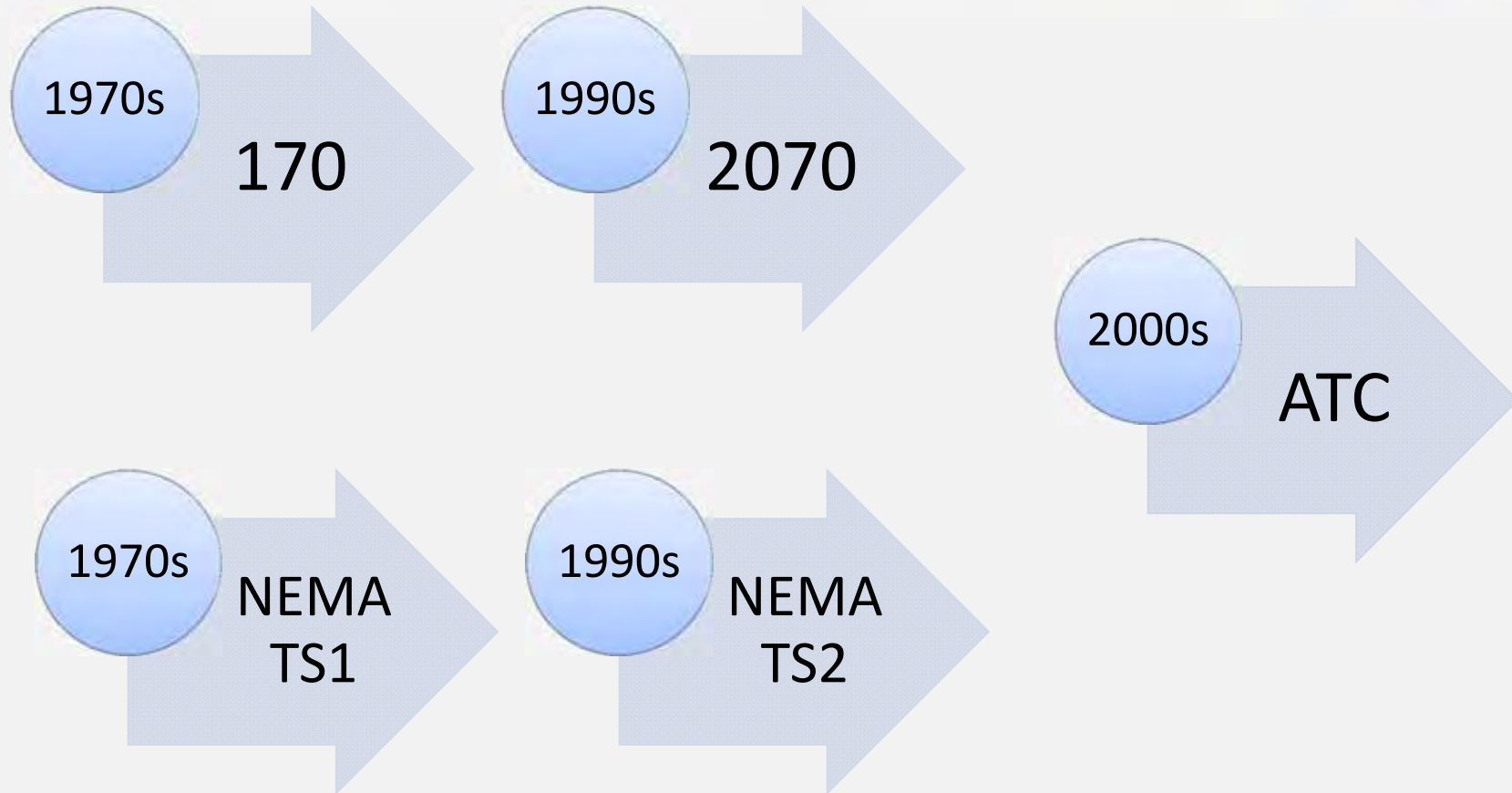
ITE Mid-Colonial District



A little history...



A little history...



Why is the ATC needed?



NEMA and Caltrans

- Competing standards
- Proprietary hardware and software
- Older technology
- Inconsistent user experience

ATC

- Best of both worlds
- Hardware interoperability
- Modern operating system
- Hardware flexibility
- ATC Committee – ITE, AASHTO, NEMA

What are the relevant ATC standards?



ATC 5201 v06.22 – Advanced Traffic Signal Controller

- More flexible hardware requirements
- Requires vendors to provide SDK and hardware libraries
- Allows for more cost effective manufacturing
- Encourages compatible components
- Linux kernel
- Multi-processing

ATC 5401 v02.17 – Application Programming Interface (API)

- Provides a consistent application interface between software and:
 - Front Panel Display
 - Keypad
 - USB and Ethernet ports
 - Controller clock and Time Sync utilities
- Better management when running multiple apps
- Provides a consistent hardware solution for 3rd party apps
 - Think Android

Role of ATCs in the Connected Vehicle World



What's happening now?

- Powerful, Linux-based computer
- Open development platform
- Host V2I protocols for DSRC communications
- Transit/Emergency Preemption/Priority Service Detection



Role of ATCs in the Connected Vehicle World



What's coming in next 2-5 years?

- CV Pilot
- Freight management
- Standard Emergency Preemption and Transit Priority Service
- Enhanced vehicle detection
- Safety
 - Dilemma zone detection
 - Emergency vehicle routing
 - Conflict avoidance
 - Pedestrian presence

Role of ATCs in the Connected Vehicle World



What's going to happen beyond the next 5 years?

Application	
Red Light Violation Warning	RLVW
Reduced Speed Zone Warning	RSZW
Transit Pedestrian Warning	
Freight Signal Priority	FSP
Mobile Accessible Pedestrian Signal System	PED-SIG
Eco-Approach and Departure	
Eco-Traffic Signal Timing	
Eco-Traffic Signal Priority	

Summary



The Advanced Transportation Controller platform is the key to standardized management of operations, data collection, and Vehicle to Infrastructure (V2I) applications.