



RAPID ATMS DEPLOYMENT **SUCCESSES AND LESSONS LEARNED**

ITS Heartland Conference
April 30, 2024





SOME DEFINITIONS

Terms

- **ATMS: Advanced Transportation Management System**
 - The software and devices used to manage traffic, incidents and other operational aspects of the transportation system
- **Deployment:**
 - Provisioning servers, installing software, configuring devices, and networking rules to get a functioning system
- **Rapid:**
 - = (time you have) / (time you need)
 - ATMS deployment is usually a 12+ month process.

This Example...

- Replaced a legacy ATMS with IRIS in North Dakota
- Initial timeline was 6 months. Actual was about 4.5 - 5
- Mid-Sized System:
 - ~90 Message Signs (34 portable)
 - 156 Cameras (~116 on cellular modems)
 - 52 RWIS stations
 - 43 MDS (vehicle detectors)
 - 1 Lane Control Sign
 - Automated RWIS messages (new functionality)

**THE RARE PLACES ISSUES
MAY ARISE...**

EVERYWHERE!!

But let's try to be specific...

Deployment Steps

PLACES TO LOOK OUT FOR ISSUES THAT CAN SLOW YOU DOWN





- Contracting
 - Terms & Conditions may need negotiation
 - Approval on both sides takes time
- Other Concerns
 - Background checks
 - Legal reviews
 - Internal approval for network access



- Networking
 - Servers to Devices
 - Servers to Servers
 - Servers to Users
- Workstations
 - Browser compatibility/software installation
 - User privileges
- Servers (if needed)
 - CPU/RAM/Storage provisioning.



- Compatibility
 - Software drivers
 - Standards conformance (does it REALLY comply?)
- DMS Fonts!
- New network security restrictions on protocols, etc.
 - What's changed since the last time?
- Subtle differences even when things are compatible.



- Incoming Data
 - Do other systems supply data to your ATMS (CAD? Weather?)
 - Are they reachable from the new system?
- Outgoing Data
 - Traveler information, traffic data archives, weather information
 - Are they reachable from the new system?

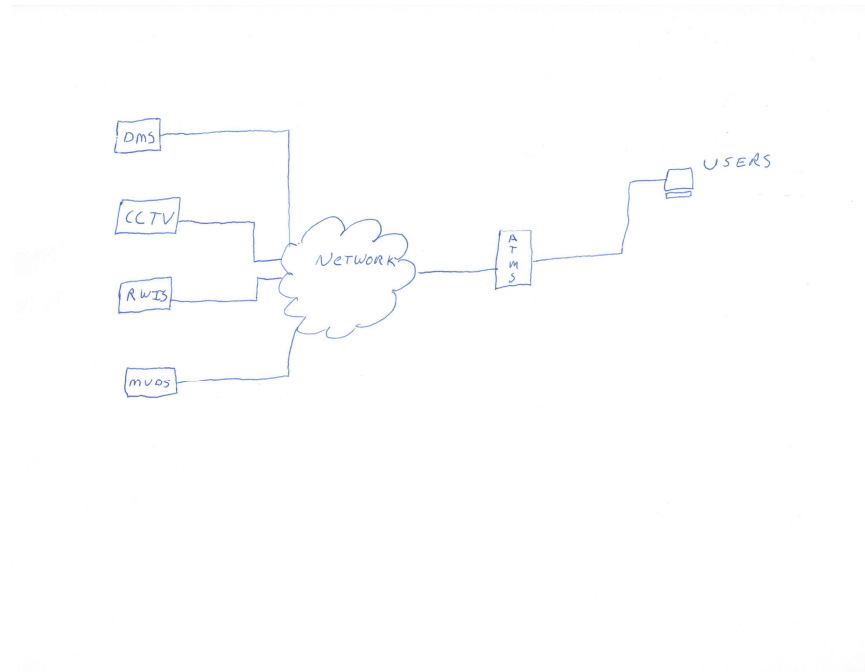


LESSONS AND STRATEGIES



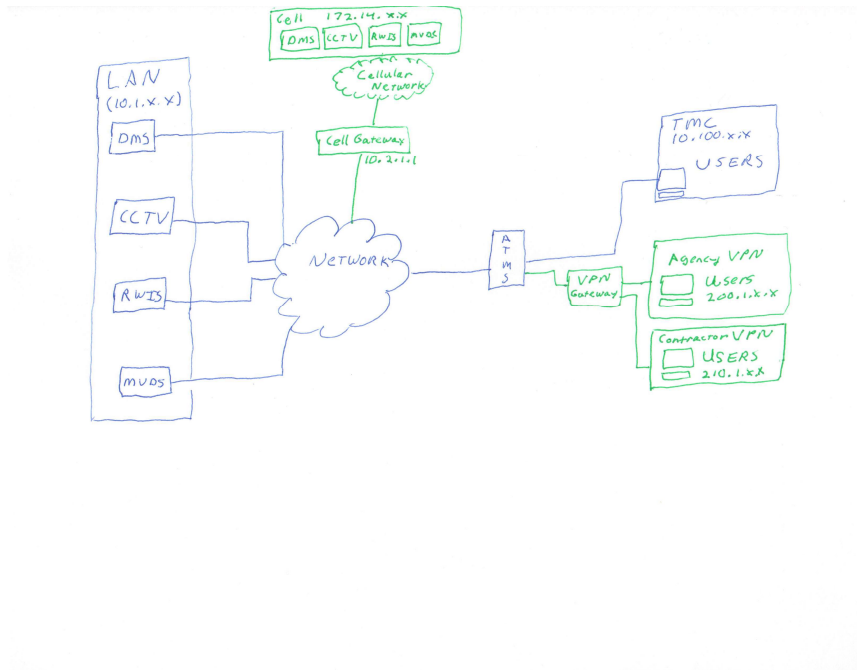
1. Draw Lots of Pictures!

- Start Simple



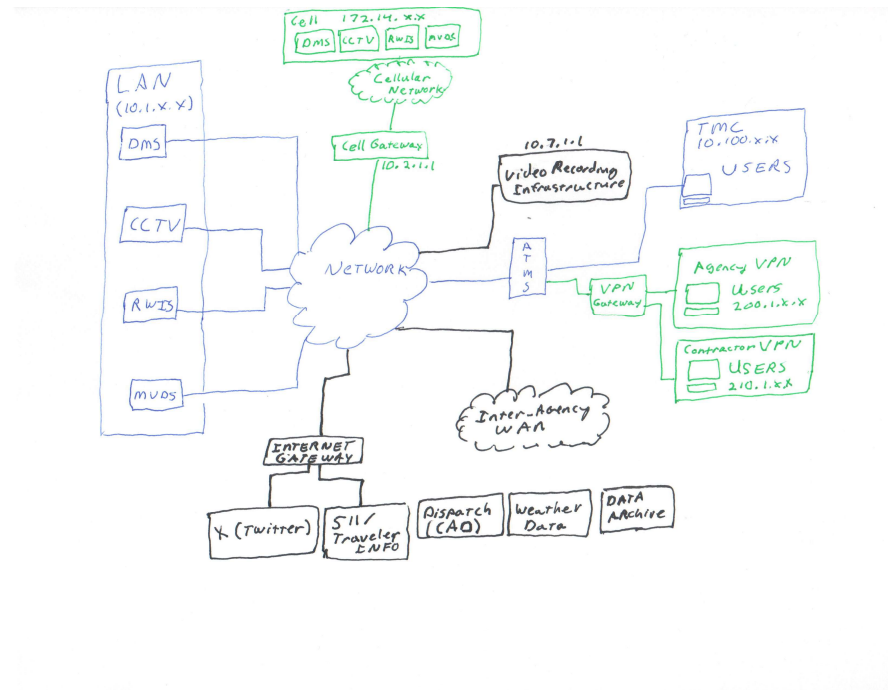
1. Draw Lots of Pictures!

- Start simple
- Add detail



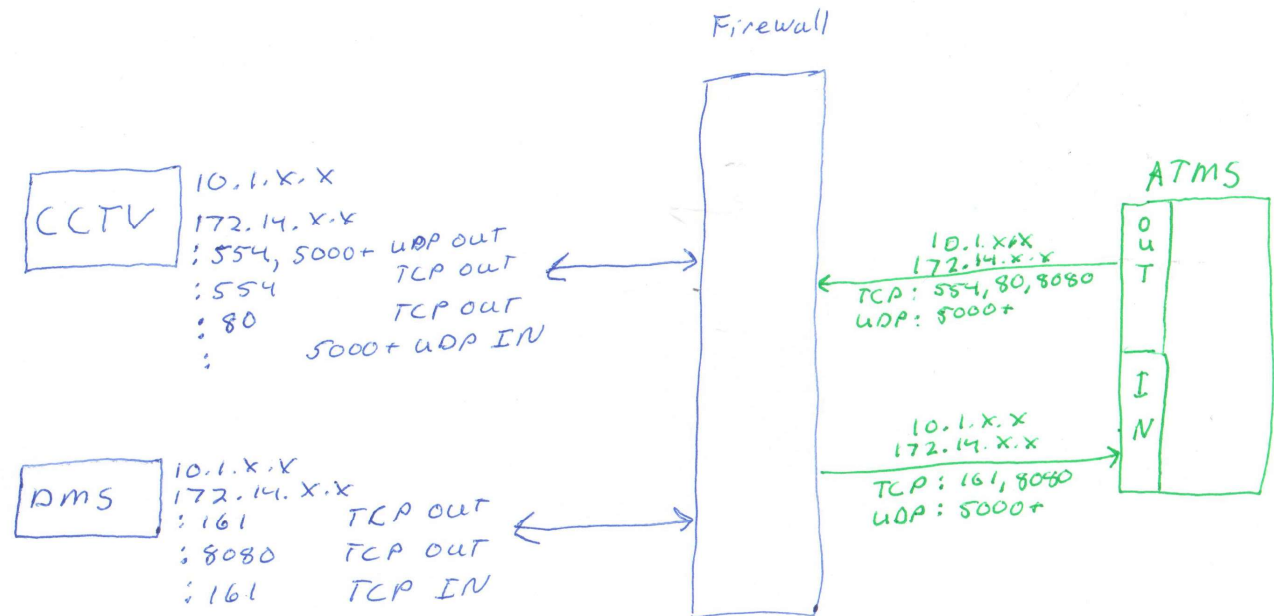
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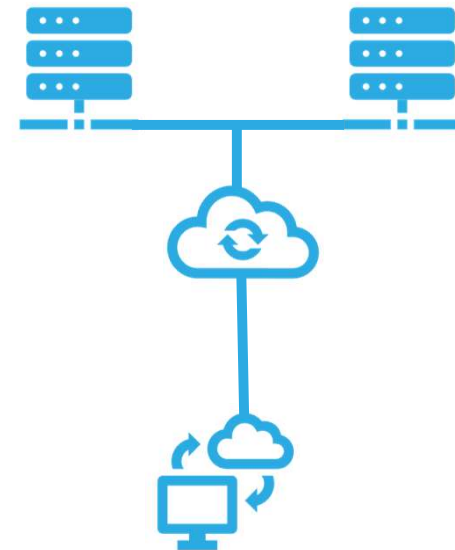
- Start simple
- Add detail
- Different pictures for different needs



2. Make Friends with IT!



- Network management is key
- Establish a single contact for ALL requests
- Account for internal IT processes
 - Ticketing
 - Change Review Board
 - Maintenance cycles
- Know the rules – what’s allowed & what’s not.
- Communicate new system needs as early as possible.



3. DMS Fonts & Graphics

- NTCIP font management is a mess
- Document font tables on EVERY DMS
- Check font numbers used in every message ([fo] tags)
- Check graphics tables in EVERY DMS
- Check graphic numbers in every message ([gn] tags)
- Document & share with vendors

4. Device Authentication

- Check community name on EVERY DMS
- Check username/password on everything else
- Keep everything documented

5. User Authentication

- Where are they (TMC? District? VPN/Home?)
- Document user/types (privileges)
- Authentication integration (LDAP? SSO? AD?)
 - I'm sure IT will have thoughts on this.

6. Test! Test! Test!

Test	Why
System Access from each workstation	Users on different networks have different access rules for servers
Every device (or at least each type on each subnet)	Devices may have credential, configuration or network differences (that one modem on a different subnet...)
Message appearance	Differences in font tables/configurations between signs – visually verify
Pan-Tilt-Zoom	Cameras use different network ports for video and control and may not be consistent
Automated functions	If you don't test, you won't know it doesn't work until you REALLY need it

Thank You!



Takeaways:

- Sketch your system
- Inventory all settings
- Document DMS Fonts/Graphics
- Test!
- Buy pizza for the IT staff!

