



Bridges and Tunnels

CEMS PILOT

CATASTROPHIC EVENTS MITIGATION SYSTEM



PILOT GOALS



Protect Revenue



Customer Satisfaction



Secure Systems



Leverage Existing
Systems & Infrastructure

B&T PROFILE

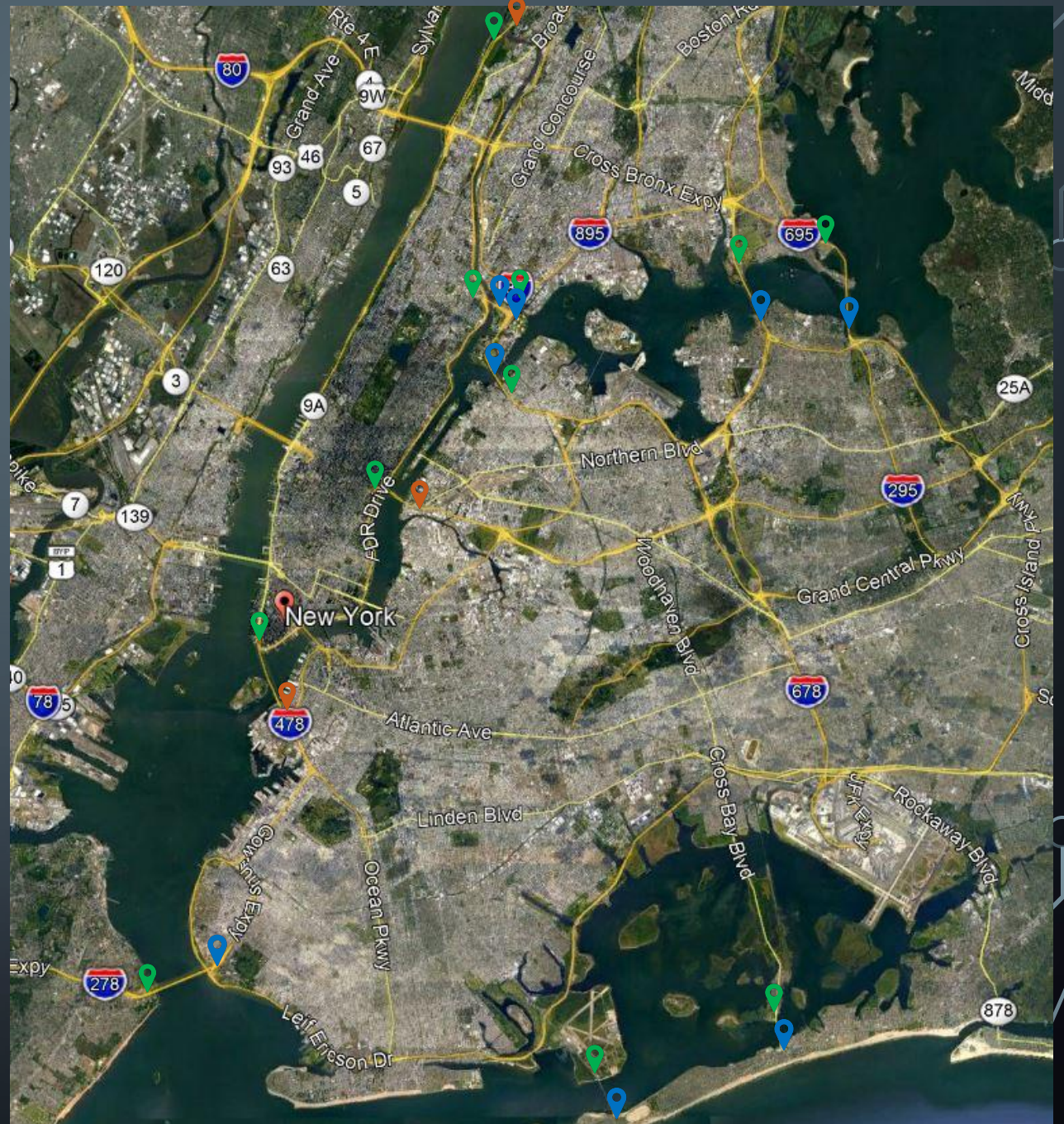
- Full ORT 9/30/2017
- 7 Bridges & 2 Tunnels
- 19 Toll Zones
- 85 lanes Total
- 8 Reversible Lanes
- Avg Traffic + 850,000 VPD
- Revenue 2+ Billion Annually



APPROACH

- 📍 ORT Toll Zone
- 📍 CEMS Trailer Site
- 📍 CEMS over the road

CEMS Primary function is Travel Time, its Secondary function is 24/7 failover for ORT System with AVI lookback capability.



REVENUE PROTECTION USAGE

| Failure Event Type | ORT | CEMS |
|--|-----|------|
| Network Outage | ✓ | N/A |
| Power Outage | ✓ | N/A |
| Classification System | ✓ | N/A |
| Camera System | ✓ | N/A |
| Plaza Computer | ✓ | N/A |
| Roadside Computer | ✓ | N/A |
| AVI System | ✓ | N/A |
| Loss of ORT Gantry | ✗ | ✓ |
| Loss of ORT Toll Equipment Building | ✗ | ✓ |
| Loss of ORT System Partially or Entirely | ✗ | ✓ |

CONFIGURATION OVER THE ROAD

AVI and VES Operations

Travel time and AVI Ready



CONFIGURATION TRAILER SITES

Travel Time and AVI Operations Ready



Deployment Ready ~ 2 hours



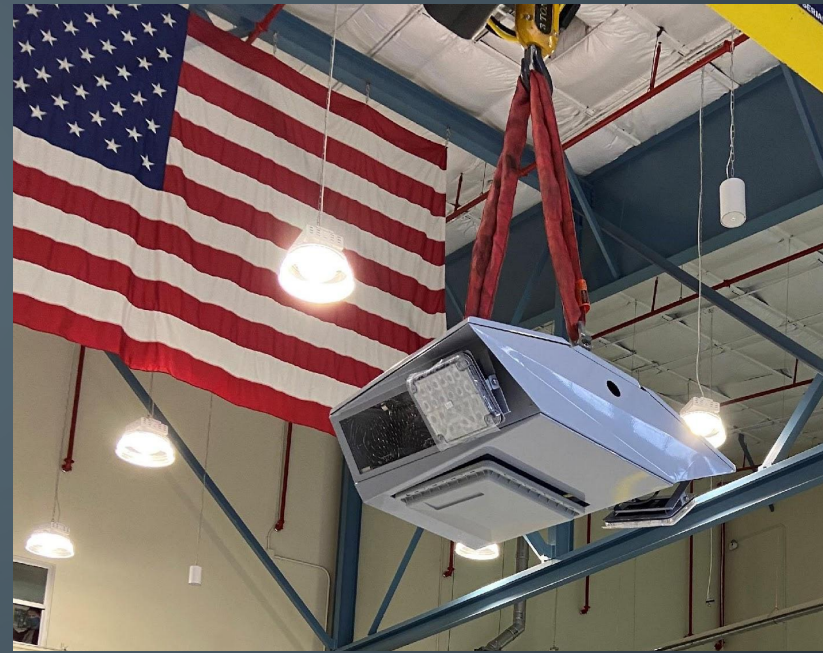
AVI and VES Operations



EQUIPMENT

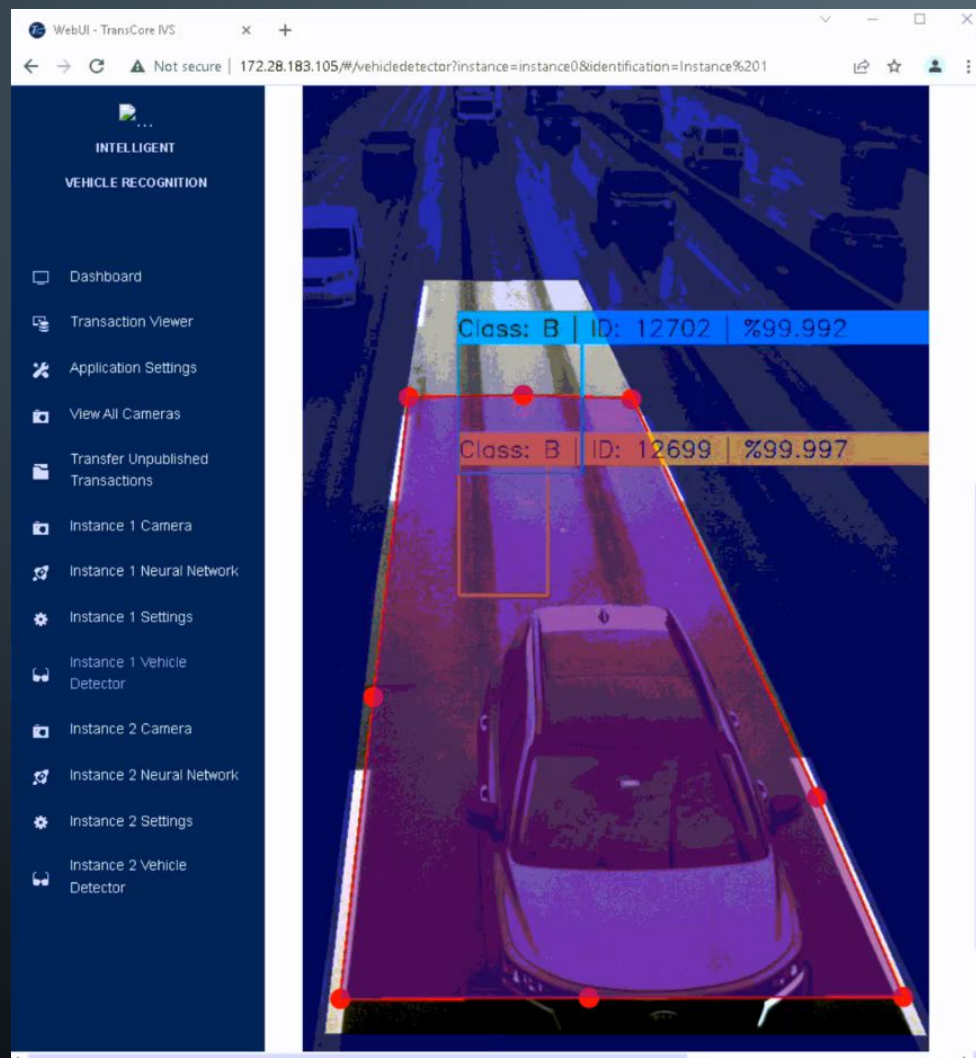


Side fire cluster



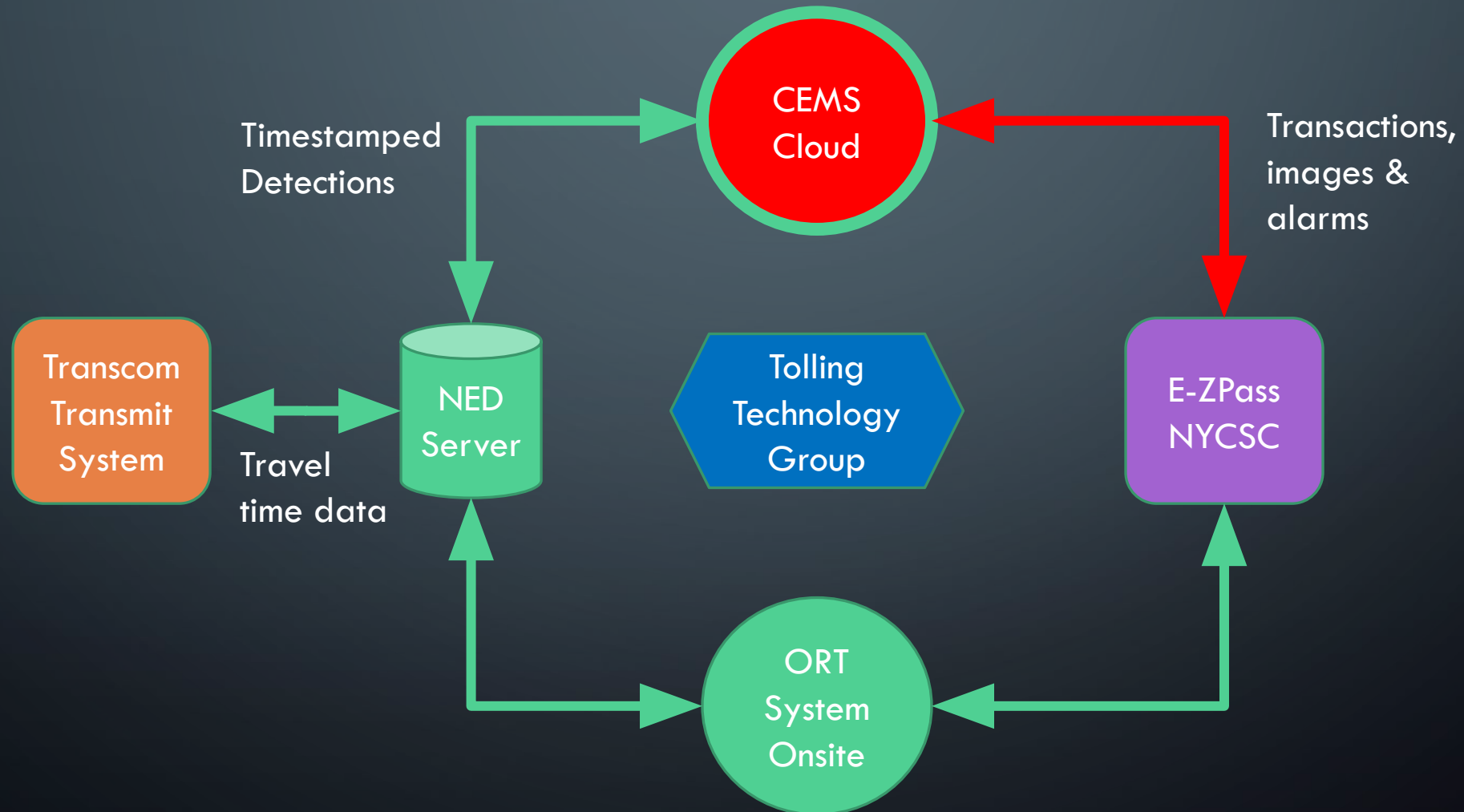
Over the road cluster

PRELIMINARY TESTING



ARCHITECTURE

— Normal Operations
— CE Operations



CRITERIA FOR SUCCESS

Acceptable levels of:

- Vehicle detection
- Tag read and association
- Readable plate images
- Front and rear image association
- Class mapping
- Duplicate filtering



CONTACT DETAILS

sreis@mtabt.org