Board of Directors Retreat

CAD/AVL Project Update

May 29, 2019

AGENDA

- Introductions
- Project Background
- The Basic CAD/AVL Replacement
- Deployment to Date
- After Phase I Final Acceptance
- Demo
  - Rider Experience Demo
  - Operations Control Center Demo
  - Maintenance Demo
  - Next Steps

Project Background
Replace the Orbital 2000 CAD/AVL System

PROJECT TIMELINE	DATE
Feasibility Study	October 2012
Request For Information	June 2014
Formal RFP for CAD/AVL Replacement	October 2014
Contract Execution with Clever Devices	July 2015

Phase I: Basic CAD/AVL Replacement
Communication between the Operations Control Center(s) and ACT Vehicle Operators

- Communications from Operations Control to Operators on the Vehicle

- Automated Vehicle Location

- Automated Onboard Next Stop Announcements and Interior Sign Display

- Automated Vehicle Monitoring

- Turn by Turn Directions to Operator

- Real Time Passenger Information System (NextBus Replacement)

- Dynamic Scheduling (Detours, Headway Management, Service Interruptions)

To Date The Project has Deployed……..

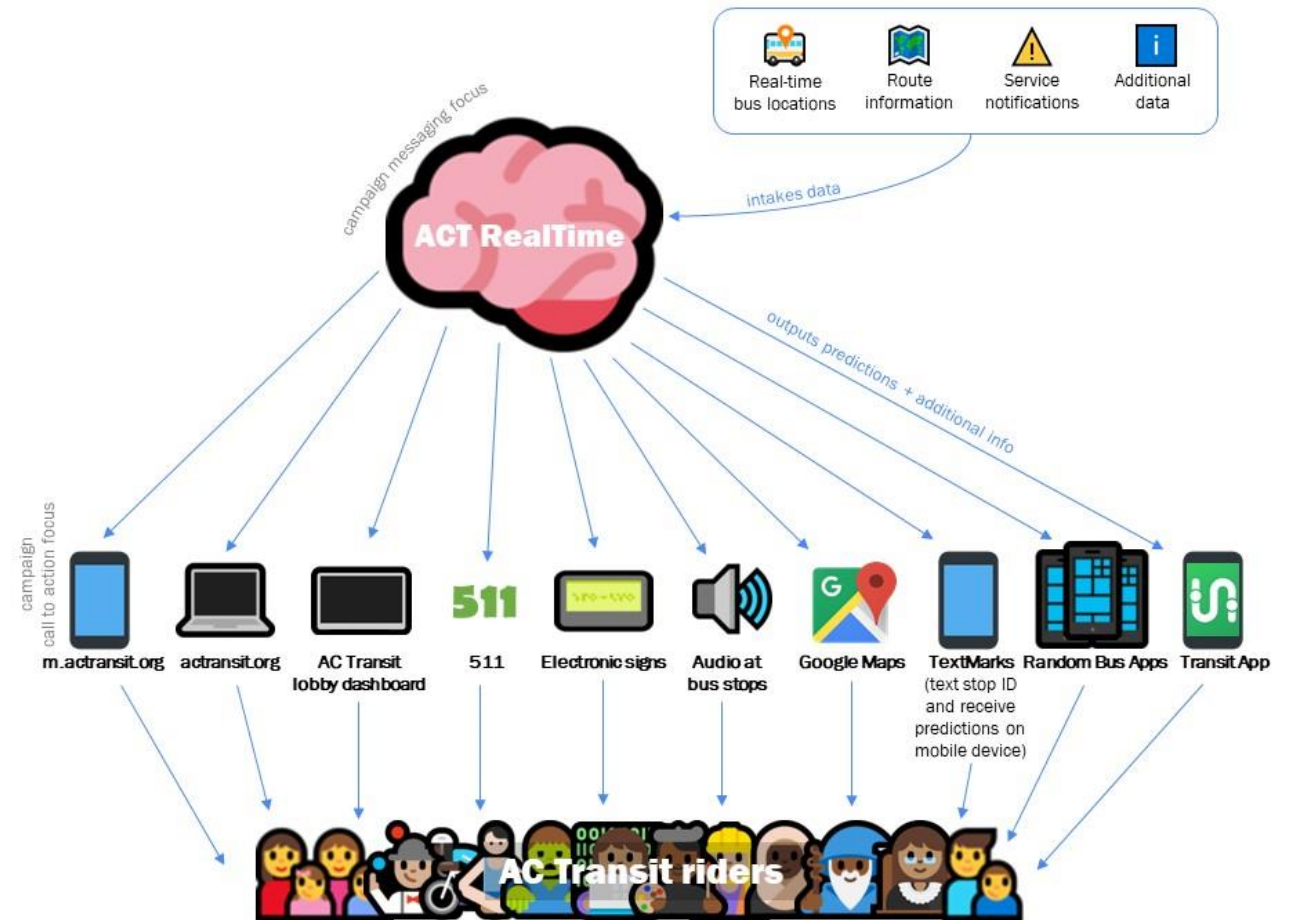| STATUS	
✓	CAD/AVL installations in 637 Vehicles
✓	10 Operations Controller Workstations and Furniture to a new Operations Control Center
✓	27 non-revenue vehicle conversions
✓	100 Android Tablets
✓	85 of 113 Real Time Passenger Information Wayside Sign Conversions

After Phase I System Acceptance

DELIVERABLE	DATE
Secure Bus Technology	3/6/2020
HASTUS Daily Interface Completion	7/1/2020
HASTUS Advanced Integration	7/1/2020

Rider Experience

ACT RealTime: more than an app

The ACT RealTime technology takes data from multiple sources and calculates predictions based on these and other pieces of data. ACT RealTime passes these predictions, along with additional information, to an API so various outputs can access this data. These outputs display all or some of this information to our riders.

campaign messaging focus

intakes data

outputs predictions + additional info

Real-time bus locations
Route information
Service notifications
Additional data

ACT RealTime

campaign call to action focus

m.actransit.org
actransit.org
AC Transit lobby dashboard
511
Electronic signs
Audio at bus stops
Google Maps
TextMarks (text stop ID and receive predictions on mobile device)
Random Bus Apps
Transit App

AC Transit riders

Rider Experience Demonstration #1

ACT RealTime

Operations Control Center Modules   1/1:

Disruption Management Module

- Cancel Trips
- Reinstate Trips
- Bus bridging
- Dynamic detours
- Bus shelter communication
- Service bulletins
- Express buses

Critical Lates / Early

An event that is triggered for any given route that is so late it cannot start the next trip on time.

Line Management / OTP

Operations Control Center Modules   2/2:

Turn-by-Turn

- Create planned detours in CAD
- Operators /OCC will use as routes are validated.

CAD Access / Playback

- Incident Management tool to see cancellations, road calls, etc.

Tablets

- Will allow for the Operations Control Center to become mobile in case of an Emergency

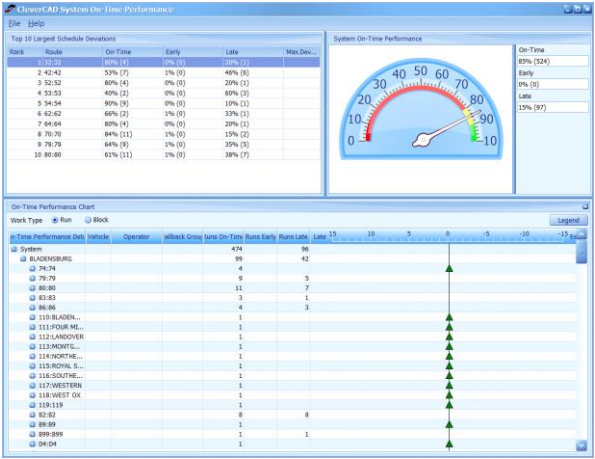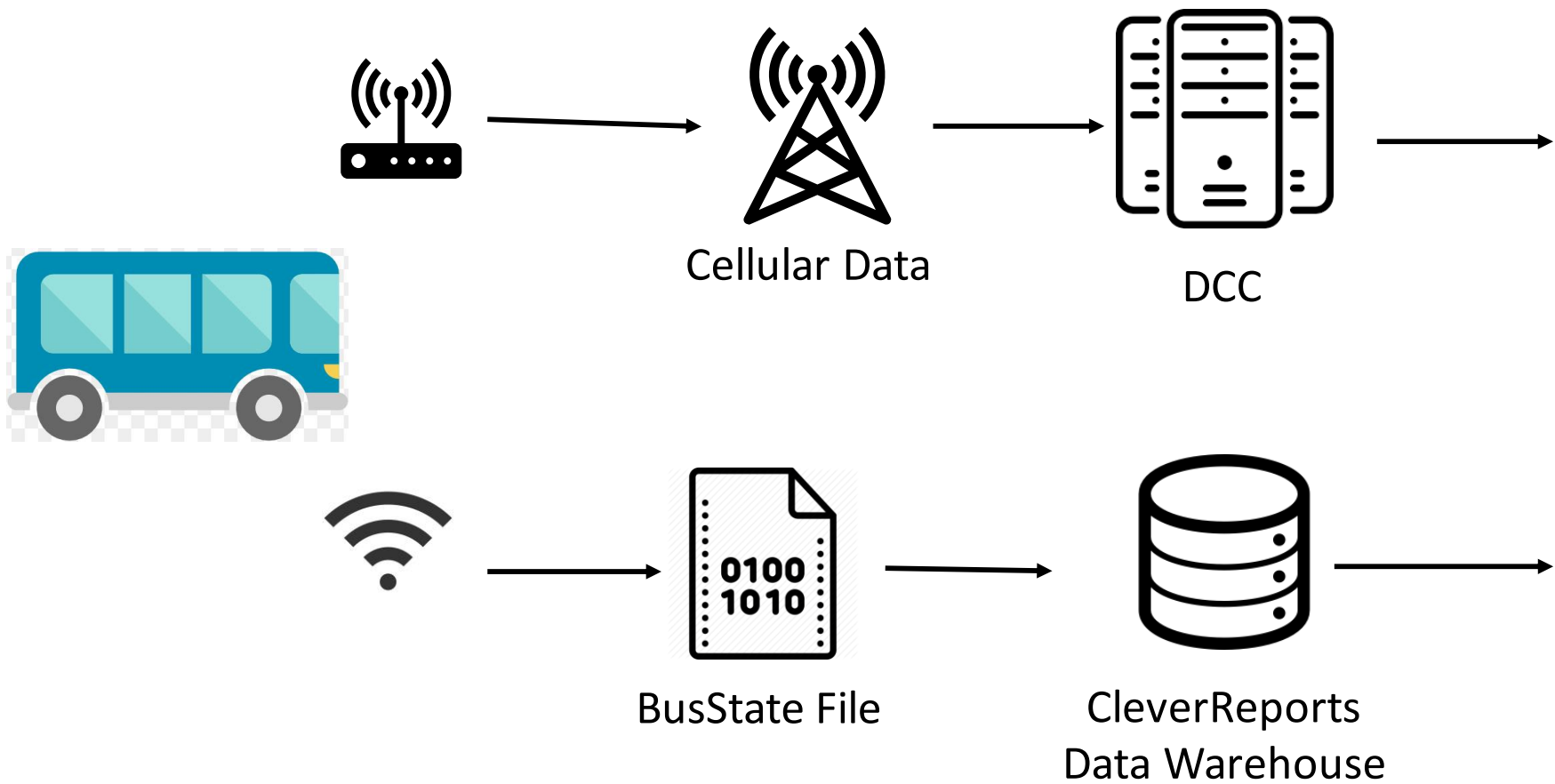# Operations Demonstration #1

Tablet Voice Call

Operations Demonstration #2

Disruption Management

Operations Demonstration #3

CleverCad Map

How does the Clever Devices OTP Calculations work?

Cellular Data

DCC

CleverCAD

BusState File

CleverReports
Data Warehouse

CleverReports

Operations Demonstration #5

CleverReports

Maintenance Modules

- **Clever Devices AVM (J1939)**
  - Ability to Read Everything on CAN
  - Fleet Health
  - Troubleshooting
  - Trend Analysis
  - Live On Demand Data

- **Reports**
  - Broadcast Reports to Field
  - Broadcast Seasonal Reports

- **Future Usage**
  - Prognostics

Maintenance Demonstration #1

AVM

Next Steps

Warranty:

— 5-year Warranty commences upon Final Acceptance

— Warranty Covers all hardware and software (with the exception of tablets)

— Tablets have a one year manufacturer's warranty

— Fixed Priced Options Available for extended warranty

— Critical Issues: Service Tech onsite within 4 hours if unable to solve problem remotely

— Non Critical Issues: 1 Business Day response time

— 1 Annual Upgrade (above and beyond problem resolutions)

Additional Training:

1 Wayside Sign Hardware Maintenance

2   CleverAnalytics

3   Equipment Maintenance Level II

4   Executive Management Orientation and Commissioning

5   Refresher Training

Questions ?