

# Proofs of Concept Projects



## Their Importance and Value

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# Accenture's History in Transportation



## Navitaire

International ticketing for 400 million passengers across 100 Airline, Rail and Bus Organizations



## RENFE

National mobile ticketing service for Spanish Rail



## PRESTO

First multi-agency, multi-vendor, open payments eTicketing for rail and bus.



## NY MTA

Integrated Business Services Center serving all MTA agencies



## OV-Chipkaart

First nation-wide eTicketing for rail and bus in The Netherlands. 7 million transactions a day, 12 million cards



## Via Verde

National clearinghouse and account service for tolling, parking, and historic sites in Portugal



## Czech HGV

National tolling revenue, asset and retail management for Czech Republic



## Illinois Tollway

Clearinghouse, account service, and data broker for statewide tolling



# Interloc Solutions – 100% Maximo



- 100% dedicated to IBM Maximo – OEM, Reseller, Implementation
- IBM Premier Partner - Gold Technical Accreditation across North America (US & Canada)
  - IBM certified employees with hundreds of combined years of Maximo expertise
- Long-term experience with large Transportation industry Maximo implementations
- Mobile Informer mobility platform dedicated to Maximo
- Internationally hosted and managed services
- Community involvement
  - CanMUG, GOMaximo, MUWG,
  - Tivoli User Community



# The EAM Journey?



- The EAM Journey can be a Loooong journey – Leadership often asks “When will you be done”
- When on the Journey – There are cost and cultural constraints limiting the number of concurrent projects
- To address the regular stream of new regulations and evolving operational requirements, the EAM Journey is often adjusted
- New EAM projects need time to resolve the gap between written requirements, what is to be delivered and the customer’s expectation – too often too late...
- One option to new requirements on the EAM Journey is to use a Proof of Concept project as a first step



# What *is* a Proof of Concept?

- An operational *example* of a solution
- Proves the viability of the approach
- Defines and clarifies assumptions
- Concentrates on key areas
- Marketing for internal support
- Helps user buy-in from first principles
- Proving the point – but as a ‘throwaway’ investment that may not be included in the final version
- ***Main Deliverable is to answer the question – ‘Can this be done?’***



# What is a Proof of Concept *NOT*?



- A production pilot
  - Pilots are pre-production verification exercises of completed solutions
  - Pilots confirm functionality to users
- The final version of the solution
  - Used to show potential solutions
  - Build support for the program at the conceptual stage, even before requirements



# The Value of a Proof of Concept



- *With* a POC:
  - Program sponsors see and support the approach
  - Executives can estimate and justify program costs and investments
  - Confidence builds in the delivery process
- *Without* a POC:
  - The solution can be 'nebulous' and hard to envision
  - There is much less confidence in the outcome
  - Estimations and justifications can vary widely



# Differences Between a POC and a Standard Project



Activity	Proof of Concept Project	Standard Project
Unproven Concepts	Allowed	Not Allowed
Detailed Requirements	Draft	Auditable
Execution Time	Minimal	Standard
Budget Definition	Minimal	Standard
Documentation	Limited	Comprehensive
Project Process	Nimble	Rigid
Production Ready	No	Yes
Experimentation	Expected	Limited

# Differences Between POC and a Standard Project



Activity	Proof of Concept Project	Standard Project
Licenses Purchase	Trial	Full
User Base	<20	Full
Support Model	Limited	Full
Change Control	Limited	Full
Time to Value	Short	Medium to Long
Assumed Risk	Limited	Full

An Example POC Project



Conducted for  
New York City Transit – Subways

Electronic Joint Switch Inspection –  
Using Mobile Devices



# Metropolitan Transit Authority (MTA) POC



The Metropolitan Transportation Authority (MTA) is North America's largest transportation network, serving a population of 15.1 million people in the 5,000-square-mile area fanning out from New York City through Long Island, southeastern New York State, and Connecticut.

**The MTA consists of:**

- New York City Transit
- MTA Bus
- Metro-North Railroad
- Long Island Rail Road
- Bridges & Tunnels
- Capital Construction



# MTA Assets



5,700 buses



74 shops/yards/depots



2,393 commuter fleet



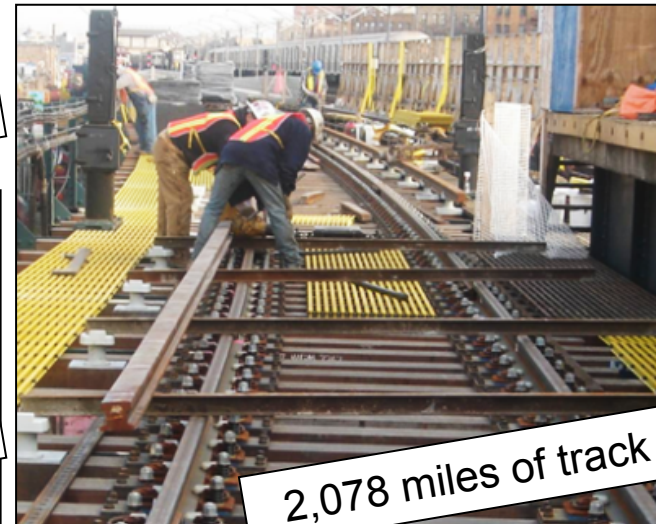
713 stations



6,465 subway cars



9 road bridges & tunnels



2,078 miles of track

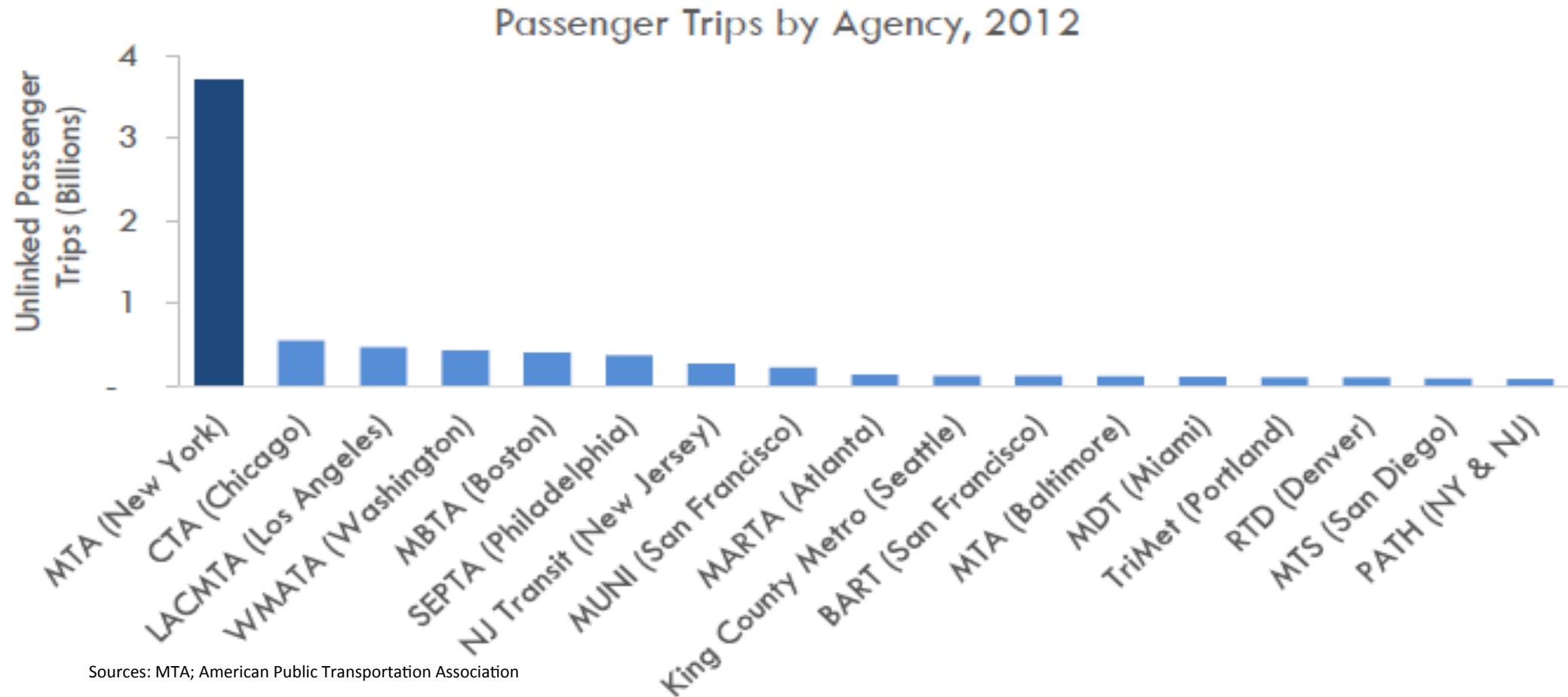
- 350 power substations
- 1,322 miles of 3<sup>rd</sup> rail
- 291 pump rooms, etc...



# MTA Transit Ridership

Just for the record 😊

MTA transit ridership exceeds the next 16 US transit networks ... **Combined**



# Concourse POC – Technology Demonstration

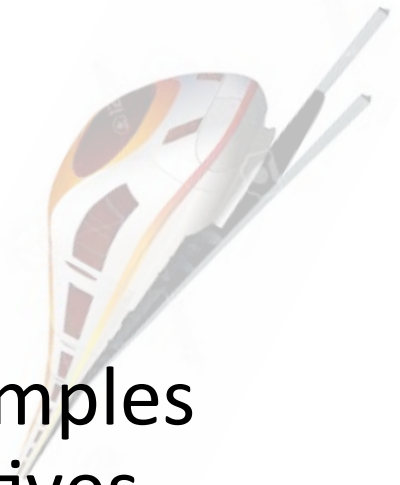
Joint Switch Inspection POC with Enterprise CMMS – Mobility and GIS

There are over 2,600 switches in the NYCT Subway System.

Every month Track & Signals employees jointly inspect all mainline switches.



# Pilot vs POC



## What is a Proof of Concept (POC)?

A Proof of Concept project demonstrates tangible examples to support the transition of ideas into definitive objectives. A POC is not a pilot for a pre-production product.

[We differentiate this to point out that the delivery timeframe and methods followed were simplified by the Plenipotentiary 😊 --- Liberties were taken in the POC that would not be allowed in a Pilot/Production project.]



# Project Concepts Explored

**MTA New York City Transit**  
Department of Subways

**JOINT SWITCH and FROG INSPECTION FORM**

DATE: \_\_\_\_\_

GENERAL INFORMATION: SUPERINTENDENT ☐ MONTHLY ☐ QUARTERLY ☐ SPECIAL INSP. (Reason): \_\_\_\_\_

Division: SMT ☐ IND ☐ IST ☐ Line: \_\_\_\_\_ Track: \_\_\_\_\_ Switch #: \_\_\_\_\_

Location: \_\_\_\_\_ Classification: Mainline ☐ Yard ☐ Type of Switch: Standard ☐ Special ☐

Configuration: Turnout ☐ Single X-over ☐ Double X-over ☐ Equilateral ("V") ☐ Turnout Size (Frog #): \_\_\_\_\_ Point Length: \_\_\_\_\_

Switch Hand: LH ☐ RH ☐ "N" ☐ Train Traffic: Facing ☐ Trailing ☐ Both ☐ Rail: 100# ☐ 115# ☐ Track Type: \_\_\_\_\_

Point Type: A.R.E.M.A. ☐ KNUCKLE "N" ☐ "N" ☐ KNIFE ☐ LAP ☐ Environment: Dry ☐ Wet ☐ Other: \_\_\_\_\_

TRACK SUB-DIVISION: \_\_\_\_\_ SECTION: \_\_\_\_\_ ZONE: \_\_\_\_\_ SIGNAL MAINTAINER SECTION: \_\_\_\_\_ Machine: A15 ☐ MD46 ☐

SWITCH COMPONENTS		GOOD/PROG	DEFECT	REMARKS	See Machine Test	See	GOOD/PROG
Front Rod / Switch Foot	<input type="checkbox"/> / <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lock Rod / Lock Dogs	<input type="checkbox"/> / <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		See Rods / Clamps / Crank	<input type="checkbox"/>	<input type="checkbox"/>
TSP Pin / Outer Pins	<input type="checkbox"/> / <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		AND Check Latch Outer Pins	<input type="checkbox"/>	<input type="checkbox"/>
Cap Screws / Lugs / Thru-bolts	<input type="checkbox"/> / <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		AND CP Valve Cover Painted	<input type="checkbox"/>	<input type="checkbox"/>
SWITCH CONDITION & TEST		OK / ADJ.	MEASUREMENT		MS Circuit Controller Box	<input type="checkbox"/>	<input type="checkbox"/>
Straight Stock	Switch Point Facing Up	<input type="checkbox"/>	<input type="checkbox"/>		Road Rod / Rail Socket	<input type="checkbox"/>	<input type="checkbox"/>
	Switch Throw	<input type="checkbox"/>	<input type="checkbox"/>		Conduits / Junction Boxes	<input type="checkbox"/>	<input type="checkbox"/>
	Obstruction Test	<input type="checkbox"/>	<input type="checkbox"/>		See Wheel Continuity Bond	<input type="checkbox"/>	<input type="checkbox"/>
Curved Stock	Switch Point Facing Up	<input type="checkbox"/>	<input type="checkbox"/>		Switch Heater	<input type="checkbox"/>	<input type="checkbox"/>
	Switch Throw	<input type="checkbox"/>	<input type="checkbox"/>		(Gauges) 5 Plate / Insulator	<input type="checkbox"/>	<input type="checkbox"/>
	Switch Looking / Adj. Test	<input type="checkbox"/>	<input type="checkbox"/>		Machine Operation	<input type="checkbox"/>	<input type="checkbox"/>

Performed inspection/testing as per Signal Divisional Procedure 00.00.00: 3.0 For all switches ☐ 4.0 A-10 ☐ 5.0 Model 3/4/5 ☐ 6.0 Return to service ☐

PRINT NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_ PASS #: \_\_\_\_\_ SIGN: \_\_\_\_\_

CONDITION OF SWITCH as per MW-1 STANDARDS

Track Components	Switch Point Gap (at Point Tip)	MW-1 INSPECTION			MEASUREMENT AND/OR DESCRIPTION & REMARKS (ALSO INDICATE ANY ADJUSTMENTS MADE)
		3	2	1	
Left Switch Point	Switch Point End Condition (feet 6")	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ in.
Right Switch Point	Switch Point End Condition (feet 6")	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ in.
Left Stock Rail	Switch Braces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Right Stock Rail	Switch Braces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Left Housetop	"P" Bolt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Housetop Bolts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Housetop Chains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chair Fasteners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Housetop Wear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ in.
Right Housetop	"P" Bolt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Housetop Bolts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Housetop Chains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chair Fasteners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Housetop Wear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ in.
Switch Tie		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Closure Tie		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Switch Rods		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Frog Bolts		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Frog Point		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TRACK GEOMETRY MEASUREMENTS		MW-1 INSPECTION		TRACK GEOMETRY MEASUREMENTS		MW-1 INSPECTION		REMARKS
3	2	1	3	2	1			
Left Stock	Top Wear: _____	<input type="checkbox"/>	<input type="checkbox"/>	# 4 ("") Track Rod, Straight Side	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>	
	Side Wear: _____	<input type="checkbox"/>	<input type="checkbox"/>		Crosslevel: _____	<input type="checkbox"/>	<input type="checkbox"/>	
Left Point	Top Wear: _____	<input type="checkbox"/>	<input type="checkbox"/>	Flangeway: _____	<input type="checkbox"/>	<input type="checkbox"/>		
	Side Wear: _____	<input type="checkbox"/>	<input type="checkbox"/>	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>		
Right Stock	Top Wear: _____	<input type="checkbox"/>	<input type="checkbox"/>	Crosslevel: _____	<input type="checkbox"/>	<input type="checkbox"/>		
	Side Wear: _____	<input type="checkbox"/>	<input type="checkbox"/>	Flangeway: _____	<input type="checkbox"/>	<input type="checkbox"/>		
Right Point	Top Wear: _____	<input type="checkbox"/>	<input type="checkbox"/>	Guard Rail Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>		
	Side Wear: _____	<input type="checkbox"/>	<input type="checkbox"/>	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>		
# 10" Plate	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>	Crosslevel: _____	<input type="checkbox"/>	<input type="checkbox"/>		
	Crosslevel: _____	<input type="checkbox"/>	<input type="checkbox"/>	Flangeway: _____	<input type="checkbox"/>	<input type="checkbox"/>		
	E. Flangeway: _____	<input type="checkbox"/>	<input type="checkbox"/>	Guard Rail Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>		
	W. Flangeway: _____	<input type="checkbox"/>	<input type="checkbox"/>	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>		
# 1 Track Rod, Turnout Side	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>	Point of Frog, Turnout Side	Crosslevel: _____	<input type="checkbox"/>		
# 1 Track Rod, Straight Side	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>	Point of Frog, Straight Side	Crosslevel: _____	<input type="checkbox"/>		
# 4 ("") Track Rod, Turnout Side	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>	Back-to-Back Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>		
	Crosslevel: _____	<input type="checkbox"/>	<input type="checkbox"/>	Guard Rail Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>		
# 4 ("") Track Rod, Turnout Side	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>	Track Gauge: _____	<input type="checkbox"/>	<input type="checkbox"/>		
	Flangeway: _____	<input type="checkbox"/>	<input type="checkbox"/>	Crosslevel: _____	<input type="checkbox"/>	<input type="checkbox"/>		

TRACK SUPERVISOR: \_\_\_\_\_ PRINT NAME: \_\_\_\_\_ SIGN: \_\_\_\_\_ TRACK SUPT. \_\_\_\_\_ PRINT NAME: \_\_\_\_\_ SIGN: \_\_\_\_\_

(\*) Use the #2 Track Rod for switches with 12 ft. points. MW-1 INSPECTION: 3.0-3.9: Caution/Alert; 2.0-2.9: Inspection/Slow Speed; 1.0-1.9: Immediate Action

## Why did we do this POC?

- Multiple disciplines (Track & Signals)
- The lifecycle of the 4 part carbon copy forms was difficult to manage
- Illegible handwriting
- Access to compliance records was difficult and time consuming
- 86 data points collected - limited analysis
- Desire to visualize clusters of work/defects
- Mature mobility doesn't exist in a disconnected environment at NYCT
- Hundreds of silo systems exist. The concept of an Enterprise CMMS was difficult to envision.





ore?

b page?

# Can you just turn this into web page?

# Can you put this form on my iPad?

# Can't you automate some of this data entry?

I have a friend who writes apps. This should be easy.



New York City Transit  
Department of Subways

JOINT SWITCH and FROG INSPECTION FORM

DATE: \_\_\_\_\_

<b>GENERAL INFORMATION</b>		SUPERINTENDENT <input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY <input type="checkbox"/> SPECIAL (NSR) (Reason): _____		
Division: BMT <input type="checkbox"/> IND <input type="checkbox"/> RT <input type="checkbox"/> Line: _____		Track: _____ Switch #: _____		
Location: _____		Classification: Mainline <input type="checkbox"/> Yard <input type="checkbox"/> Type of Switch: Standard <input type="checkbox"/> Special <input type="checkbox"/>		
Configuration: Turnout <input type="checkbox"/> Single X-over <input type="checkbox"/> Double X-over <input type="checkbox"/> Equivalent ("Y") <input type="checkbox"/> Turnout Size (Frog #): _____		Point Length: _____		
Switch Hand: LH <input type="checkbox"/> RH <input type="checkbox"/> "Y" <input type="checkbox"/> Train Traffic: Facing <input type="checkbox"/> Trailing <input type="checkbox"/> Both <input type="checkbox"/> Rail: 100# <input type="checkbox"/> 115# <input type="checkbox"/>		Track Type: _____		
Point Type: A.R.E.M.A. <input type="checkbox"/> KNUCKLE: 10" <input type="checkbox"/> 5" <input type="checkbox"/> KNIFE <input type="checkbox"/> LAP <input type="checkbox"/> Environment: Dry <input type="checkbox"/> Wet <input type="checkbox"/> Other: _____				
TRACK SUB-DIVISION: _____		SECTION: _____ ZONE: _____ SIGNAL MAINTAINER SECTION: _____		
		Machine: A16 <input type="checkbox"/> M1416 <input type="checkbox"/>		
<b>SWITCH COMPONENTS</b>		<b>GOOD / POOR</b>		
Point Rod / Switch Post		<input type="checkbox"/> / <input type="checkbox"/>		
Lock Rod / Lock Gage		<input type="checkbox"/> / <input type="checkbox"/>		
TWP Pin / Cotter Pin		<input type="checkbox"/> / <input type="checkbox"/>		
Gap Screws / Lugs / Thru-bolts		<input type="checkbox"/> / <input type="checkbox"/>		
<b>SWITCH CONDITION &amp; TEST</b>		<b>OK / FAIL</b>		
Straight Stock	Switch Point Facing Up	<input type="checkbox"/> / <input type="checkbox"/>		
	Switch Throw	<input type="checkbox"/> / <input type="checkbox"/>		
	Obstruction Test	<input type="checkbox"/> / <input type="checkbox"/>		
Curved Stock	Switch Point Facing Up	<input type="checkbox"/> / <input type="checkbox"/>		
	Switch Throw	<input type="checkbox"/> / <input type="checkbox"/>		
	Switch Locking / Adj. Test	<input type="checkbox"/> / <input type="checkbox"/>		
		<b>REMARKS</b>		
		See Machine Test <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		See Stocks / Clamp / Crack <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		A16 Clearly Latch Cotter Pin <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		A16 CP Valve Cover Painted <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		M6 Circuit Controller Box <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		New Rod / Rail Socket <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		Conducts / Junction Boxes <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		See New Continuity Bond <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		Switch Heater <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		Coating: S-Plate / Insulator <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
		Machine Operation <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>		
Performed inspection/testing as per signal Divisional Procedure 00.00.00: 3.0 For all switches <input type="checkbox"/> 4.0 4-10 <input type="checkbox"/> 5.0 Model 34/5 <input type="checkbox"/> 6.0 Return to service <input type="checkbox"/>				
PRINT NAME: _____		TITLE: _____ PAGE #: _____ SIGN: _____		
<b>CONDITION OF SWITCH as per MTA-1 STANDARDS</b>				
Track Standard See Section below Report and entered as existing		<b>NEW 1</b>		
Track Component		<b>NO DEFECT</b>		
		<b>MEASUREMENT AND/OR DESCRIPTION &amp; REMARKS (ALSO INDICATE ANY ADJUSTMENTS MADE)</b>		
Left Switch Point	Switch Point Gap (at Point Tip) _____ in.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Switch Point End Condition (first 6") _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Right Switch Point	Switch Point Gap (at Point Tip) _____ in.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Switch Point End Condition (first 6") _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Left Stock Rail	Switch Brease _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Right Stock Rail	Switch Brease _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Left Housetop	"P" Bolt _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Housetop Bolts _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Housetop Chains _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Chair Fasteners _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Housetop Wear _____ in.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Right Housetop	"P" Bolt _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Housetop Bolts _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Housetop Chains _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Chair Fasteners _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Housetop Wear _____ in.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Switch Tie _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
Closure Tie _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
Switch Rod _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
Frog Bolts _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
Frog Point _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
<b>TRACK GEOMETRY MEASUREMENTS</b>		<b>TRACK GEOMETRY MEASUREMENTS</b>		
<b>MW-1 Integrity</b>		<b>MW-2 Integrity</b>		
3 2 1		3 2 1		
Left Stock	Top Wear: _____ Side Wear: _____	# 4 ("") Track Rod, Straight Side	Track Gauge: _____ Crosslevel: _____ Flangeway: _____	
Left Point	Top Wear: _____ Side Wear: _____		Track Gauge: _____ Crosslevel: _____ Flangeway: _____	
Right Stock	Top Wear: _____ Side Wear: _____		Track Gauge: _____ Crosslevel: _____ Flangeway: _____	
Right Point	Top Wear: _____ Side Wear: _____	Heel of Switch Point, Turnout Side	Track Gauge: _____ Crosslevel: _____ Flangeway: _____	
"S" Plate	Track Gauge: _____ Crosslevel: _____ Flangeway: _____		Heel of Switch Point, Straight Side	Track Gauge: _____ Crosslevel: _____ Flangeway: _____
	W. Flangeway: _____			Track Gauge: _____ Crosslevel: _____ Flangeway: _____
	# 1 Track Rod, Turnout Side	Track Gauge: _____		Track Gauge: _____ Crosslevel: _____ Flangeway: _____
# 1 Track Rod, Straight Side	Track Gauge: _____	Point of Frog, Turnout Side	Track Gauge: _____ Crosslevel: _____ Flangeway:	

# Project Phases



New York City Transit  
Department of Subways

## JOINT SWITCH and FROG INSPECTION FORM

DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

GENERAL INFORMATION		SUPERINTENDENT <input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY <input type="checkbox"/> SPECIAL INSP. (Reason) _____ <input type="checkbox"/>							
Division: BMT <input type="checkbox"/> IND <input type="checkbox"/> IRT <input type="checkbox"/>		Line:		Track:		Switch #:			
Location:		Classification: Mainline <input type="checkbox"/> Yard <input type="checkbox"/>		Type of Switch: Standard <input type="checkbox"/> Special <input type="checkbox"/>					
Configuration: Turnout <input type="checkbox"/> Single X-over <input type="checkbox"/> Double X-over <input type="checkbox"/> Equilateral ("Y") <input type="checkbox"/>		Turnout Size (Frog #):		Point Length:					
Switch Hand: LH <input type="checkbox"/> RH <input type="checkbox"/> "Y" <input type="checkbox"/>		Train Traffic: Facing <input type="checkbox"/> Trailing <input type="checkbox"/> Both <input type="checkbox"/>		Rail: 100 # <input type="checkbox"/> 115 # <input type="checkbox"/>		Track Type:			
Point Type: A.R.E.M.A. <input type="checkbox"/> KNUCKLE: 1/2" <input type="checkbox"/> 3/8" <input type="checkbox"/> KNIFE <input type="checkbox"/> LAP <input type="checkbox"/>		Environment: Dry <input type="checkbox"/> Wet <input type="checkbox"/> Other: _____							
TRACK SUB-DIVISION:		SECTION:		ZONE:		SIGNAL MAINTAINER SECTION:		Machine: A10 <input type="checkbox"/> M3/4/5 <input type="checkbox"/>	



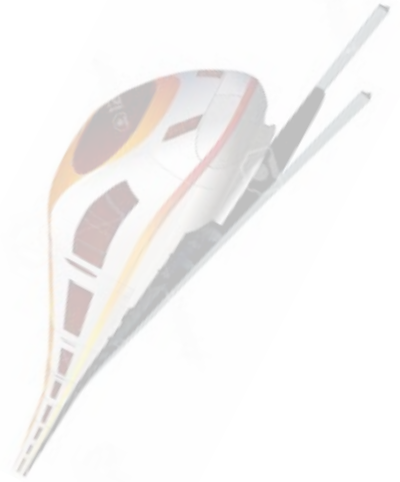
The following concepts were demonstrated within the NYCT MOW:

- BASIC
  - Application of a CMMS to support the JSI process
  - Daily Inspection Compliance Visibility
  - Paperless Work Order Process
- ADVANCED
  - Mature Use of Inspection Data
  - Field Use of Mobile Device
  - Visualization Using Mapping Technology



# Project Challenges

- NYCT had not selected an EAM system
- NYCT did not have a mobility standard
- Project sponsors were seeking a better understanding of EAM
- Expectations were not clearly defined in advance – we recognize this as part of the journey
- This kind of project had never been done before



# Custom JSI Application

Find:

Select Action

List

JSI

Work Order: 24661

Test Joint Switch Inspection - 201410W1

Job Plan: NYCTJSI6

Attachments

Location: SWC211B

C211B Switch Location

PM:

Work Type: INSP

Asset: SWC211B

TRACK, SWITCH, Mainline, Standard, Single X-Over, LH, 10

Site: NYCT

Status: COMP

Failure Class: SW

Status Date: 10/6/14 3:45 PM

Approval & Sign off

SIGNAL

PASS: MOBSIG

Full Name: Mobile Signals

Title:

Date: 10/6/14 12:13 PM

TRACK

PASS: MOBTRK

Full Name: Mobile Track

Title:

Date: 10/6/14 3:25 PM

INSPECTION

PASS: MOBREV

Full Name: Mobile Reviewer

Title:

Date: 10/6/14 3:45 PM

General Information

Filter

1 - 10 of 30

Download

Switch Components

Switch Condition & Test

Switch Condition - LH

Switch Condition - RH

Switch Condition

Track Geometry Measurements - I

Track Geometry Measurements - II

Tasks for Work Order 24661

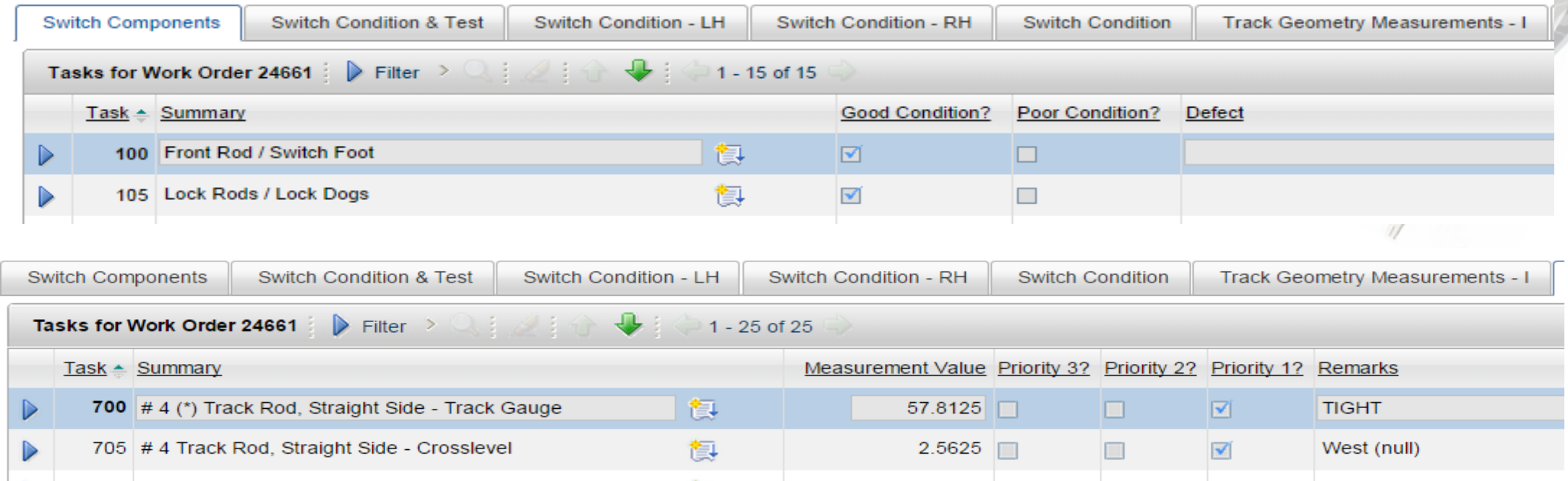
Filter

1 - 15 of 15

Download

Task	Summary	Good Condition?	Poor Condition?	Defect	Remarks
100	Front Rod / Switch Foot	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
105	Lock Rods / Lock Dogs	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
110	7/8" Pin / Cotter Pins	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
115	Cap Screws / Lags / Thru-bolts	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
120	Sw. Machine Ties	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
125	Sw. Blocks / Clamp / Crank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	NOT FUNCTIONAL	
130	A10 Gravity Latch Cotter Pin	<input type="checkbox"/>	<input type="checkbox"/>		
135	A10 CP Valve Cover Painted	<input type="checkbox"/>	<input type="checkbox"/>		

# Custom JSI Application



Switch Components | Switch Condition & Test | Switch Condition - LH | Switch Condition - RH | Switch Condition | Track Geometry Measurements - I

Tasks for Work Order 24661 | Filter > | 1 - 15 of 15

Task	Summary	Good Condition?	Poor Condition?	Defect
100	Front Rod / Switch Foot	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
105	Lock Rods / Lock Dogs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Switch Components | Switch Condition & Test | Switch Condition - LH | Switch Condition - RH | Switch Condition | Track Geometry Measurements - I

Tasks for Work Order 24661 | Filter > | 1 - 25 of 25

Task	Summary	Measurement Value	Priority 3?	Priority 2?	Priority 1?	Remarks
700	# 4 (*) Track Rod, Straight Side - Track Gauge	57.8125	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	TIGHT
705	# 4 Track Rod, Straight Side - Crosslevel	2.5625	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	West (null)

- Tabbed sections to match form sections
- Automated selection of checkboxes based on MW-1 requirements
- Custom BIRT report to print form for compliance on demand
- Comments for every task
- Meters on every task



# Core Maximo Changes

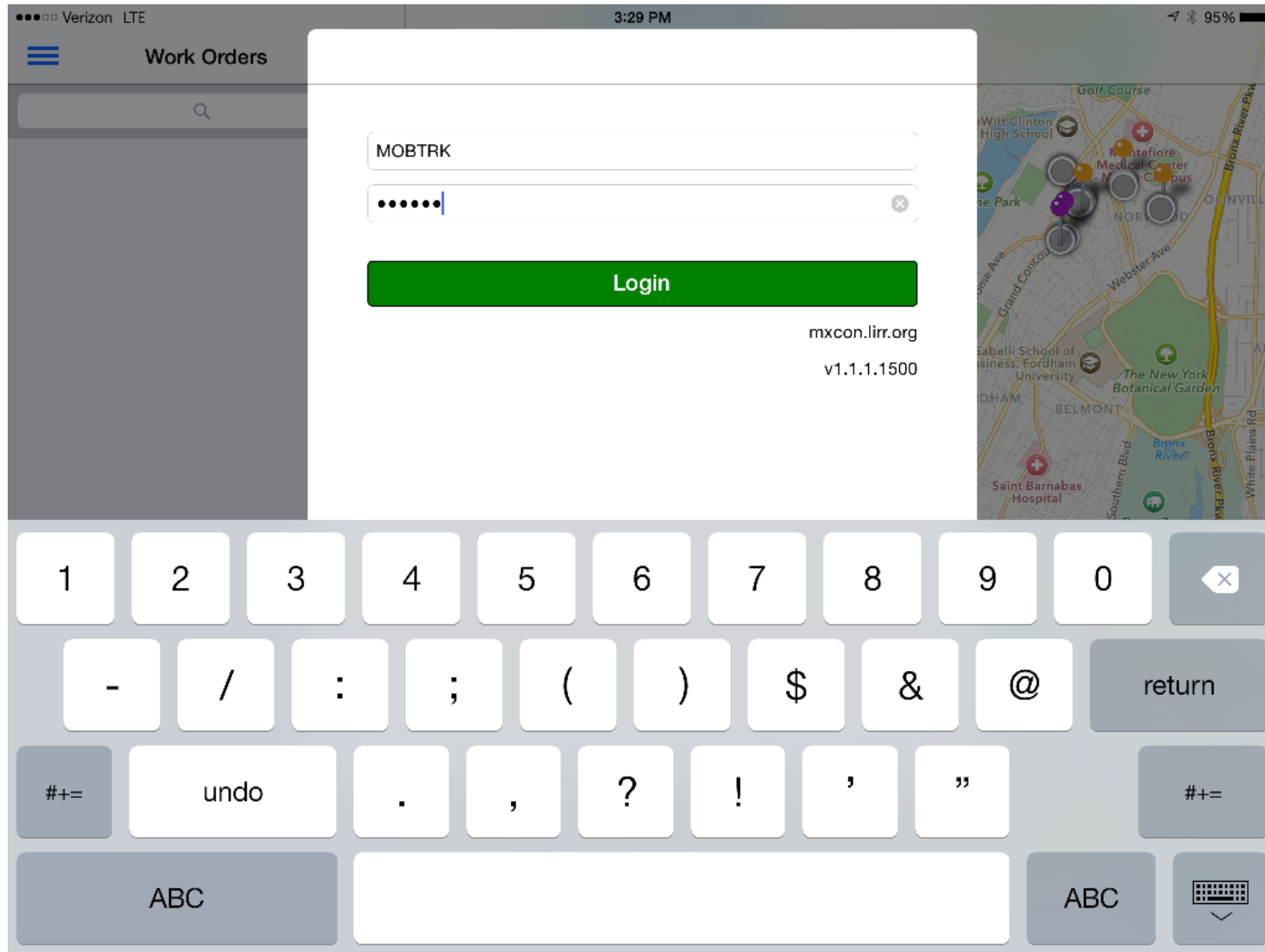
The image displays five overlapping screenshots of the Maximo mobile application interface, each labeled with a module name:

- Start Center:** The bottom-most screenshot, showing a dashboard with sections for "Quick Insert" (New Asset, New Job Plan, New Labor, New Work Order), "Bulletin Board", "My Assigned Work Orders" (listing work orders like "Corrective Maintenance of Tie Plate"), "My Work Request" (listing requests like "Light bulb in C15.06 is out"), and a "KPI Graph" with a bar chart and a table of KPIs.
- Labor:** The second screenshot from the bottom, showing a table of labor resources with columns for Labor, First Name, Last Name, Default Craft, Default Skill Level, Calendar, Work Location, Work Site, and Organization.
- Assets:** The third screenshot from the bottom, showing a detailed view of an asset (SWC105B) with tabs for List, Asset, Spare Parts, Safety, Meters, Specifications, Features, Relationships, and Work Assets.
- Job Plans:** The fourth screenshot from the bottom, showing a list of job plans with columns for Job Plan, Description, Revision, Duration, Supervisor, Status, Template Type, Organization, and Site.
- NYCT JSI:** The top-most screenshot, showing a detailed view of a Job Plan (NYCTJSI6) with fields for Work Order, Location, Asset, Job Plan, PM, Site, Work Type, Status, and Status Date.

A large blue arrow points from the screenshots towards the text "Mobile App Screens..." in the bottom right corner.

Mobile App Screens...





JSI POC  
DEMO



# User Experience

Can we do our attendance and bulletins on this?

*I've been waiting my whole career for this.*



*Why would you go pilot somewhere else?*

*If you make our work easier, we will love new technology.*



**Please don't let this be another initiative that comes and goes.**



# Accomplishments

- Multi-Agency Partnership (NYCT, LIRR, MTA IT)
- Chief Maintenance Council for guidance
- Input from stakeholders at all levels from Signal Maintainer to Track Supervisor/ Superintendent to Chief Officers & VP, MOW
- Proved Field Personnel could use and accept mobile solutions
- Started on journey to paperless process and concept is well received



In Summary

The JSI POC Was Very Valuable for NYCT!

Perhaps – Your Next EAM Requirement  
Should Be Demonstrated Using A  
Proof of Concept Project?



# Questions?

