



U.S. Department
of Transportation

Advanced Public Transportation Systems Deployment in the United States



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Advanced Public Transportation Systems Deployment in the United States

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Prepared by:

Office of Research and Analysis
John A. Volpe National Transportation Systems Center
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Robert F. Casey, Lawrence N. Labell

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U.S. Department of Transportation
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John A. Volpe Transportation Systems Center
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This report documents work performed under FTA's Advanced Public Transportation Systems (APTS) Program, a program structured to undertake research and development of innovative applications of advanced navigation, information, and communication technologies that most benefit public transportation.

This report is a compilation of existing and planned deployments of APTS technologies and services. The information was collected during the Fall of 1995 and was obtained through contacts with one or more persons at each agency. The objective was to include information from all agencies who submitted information for the 1993 National Transit Database (NTD) Report Year, the last year for which NTD data was available at the time. A total of 464 agencies provided information for this study. Those with no existing or planned APTS systems are not included herein.

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PREFACE

The information contained in this compilation of existing and planned deployments of Advanced Public Transportation Systems (APTS) technologies and services was collected by the staff of the Volpe National Transportation Systems Center during the Fall of 1995. The data was obtained through contacts with one or more persons at each agency. The objective was to reach all agencies who submitted information for the 1993 National Transit Database (NTD) Report Year, the latest year for which NTD data was available at the time. Some reporting agencies were not appropriate for inclusion in this compilation, and some could not be contacted. Nevertheless, a total of 464 agencies provided information for this study. Those with no existing or planned APTS systems are not included herein.

This research was conducted by the Volpe National Transportation Systems Center of the U.S. Department of Transportation, Research and Special Programs Administration and was sponsored by Office of Mobility Innovation of the U.S. Department of Transportation, Federal Transit Administration. Appreciation goes to Thomas Boatman and Gerald Ruiz of the Volpe Center, who collected much of the information contained herein. Appreciation also goes to a team from Unisys, headed by Michael Redington, who compiled the data and designed a program to sort, summarize, and present the data. Finally, appreciation goes to all the agencies who supplied information for this report.

LEGEND FOR TABLES

Service Type	
FR	Fixed Route
DR	Demand Response
HR	Heavy Rail
LR	Light Rail
CR	Commuter Rail
FB	Ferry Boat

Technology	
CC	Credit Card
DIG	Digital Radio
DK	Dead Reckoning
GPS	Global Positioning System
I	In-Vehicle
LC	Loran-C
MS	Magnetic Stripe Card
OTR	Other
P	Pre-Trip
SC	Smart Card
SO	Signpost/Odometer
T	In-Terminal
TR	Trunked Radio
W	Wayside

Status	
()	Implementation Phase (At least RFP issued)
[]	Planning Phase (Actively planning system, not just considering)
*	Test/Demonstration Only

TABLE I. APTS DEPLOYMENT SUMMARY

SYSTEM	Transit Agencies Operating APTS Systems	Number of Separate Modes with APTS Systems	Total Vehicles Operated in These Modes*
Advanced Communications	80	104	21,634
Service Type			
FR		72	
DR		22	
CR		2	
LR		3	
HR		2	
FB		3	
Technology			
Trunked		78	
Digital		45	
Other		7	
Unknown		6	
Trunked + Digital		32	
Other + Digital		1	
Status			
Operational		77	
Implementation		11	
Planning		16	
Automated Vehicle Location	86	105	28,745
Service Type			
FR		79	
DR		23	
CR		1	
HR		1	
FB		1	

* Not all of these vehicles will contain APTS systems.

TABLE 1. APTS DEPLOYMENT SUMMARY

SYSTEM	Transit Agencies Operating APTS Systems	Number of Separate Modes with APTS Systems	Total Vehicles Operated in These Modes*
Automated Vehicle Location (Cont'd)			
Technology			
GPS		82	
Signpost/Odometer		15	
Dead-Reckoning		1	
Loran-C		2	
Other		3	
Unknown		2	
Status			
Operational		22	
Implementation		47	
Planning		30	
Testing		5	
Implementation/Testing		1	
Automated Passenger Counters	31	32	15,707
Service Type			
FR		31	
CR		1	
Status			
Operational		11	
Implementation		6	
Planning		13	
Testing		1	
Implementation/Testing		1	
Vehicle Component Monitoring	29	31	15,381
Service Type			
FR		29	
CR		1	
LR			

* Not all of these vehicles will contain APTS systems.

TABLE 1. APTS DEPLOYMENT SUMMARY

SYSTEM	Transit Agencies Operating APTS Systems	Number of Separate Modes with APTS Systems	Total Vehicles Operated in These Modes*
Vehicle Component Monitoring (Cont'd)			
Status			
Operational		5	
Implementation		16	
Planning		9	
Testing		1	
Automated Operations Software	75	81	29,816
Service Type			
FR		66	
DR		4	
CR		5	
LR		2	
HR		4	
Status			
Operational		25	
Implementation		35	
Planning		20	
Testing		1	
Automated Traveler Information	93	99	31,296
Service Type			
FR		84	
DR		3	
CR		5	
LR		3	
HR		3	
FB		1	

* Not all of these vehicles will contain APTS systems.

TABLE 1. APTS DEPLOYMENT SUMMARY

SYSTEM	Transit Agencies Operating APTS Systems	Number of Separate Modes with APTS Systems	Total Vehicles Operated in These Modes*
Automated Traveler Information (Cont'd)			
Status			
Operational		49	
Implementation		25	
Planning		21	
Testing		3	
Implementation/Testing		1	
Location			
Home/Work		47	
Activity Ctr/Stations - Transfer Pts		16	
Wayside		23	
In Vehicles		35	
Other		1	
Unknown		4	
Multimodal Traveler Information	10	11	5,794
Service Type			
FR		9	
DR		1	
CR		1	
Status			
Operational		5	
Implementation		3	
Planning		3	
Automated Fare Payment	65	72	20,951
Service Type			
FR		54	
DR		9	
CR		6	
LR		2	
HR		1	

* Not all of these vehicles will contain APTS systems.

TABLE 1. APTS DEPLOYMENT SUMMARY

SYSTEM	Transit Agencies Operating APTS Systems	Number of Separate Modes with APTS Systems	Total Vehicles Operated in These Modes*
Automated Fare Payment (Cont'd)			
Technology			
Magnetic Stripe		32	
Smart Card		18	
Credit Card		11	
Other		11	
Status			
Operational		25	
Implementation		19	
Planning		23	
Testing		4	
Implementation/Testing		1	
Multi-Carrier Fare Integration	29	31	11,826
Service Type			
FR		27	
DR		2	
CR		1	
HR		1	
Technology			
Magnetic Strip		20	
Smart Card		3	
Credit Card		4	
Unknown		4	
Status			
Operational		13	
Implementation		12	
Planning		5	
Testing		1	

* Not all of these vehicles will contain APTS systems.

TABLE 1. APTS DEPLOYMENT SUMMARY

SYSTEM	Transit Agencies Operating APTS Systems	Number of Separate Modes with APTS Systems	Total Vehicles Operated in These Modes*
Paratransit CAD	113	113	4,601
Service Type			
DR		113	
Status			
Operational		72	
Implementation		21	
Planning		19	
Testing		1	
Mobility Manager	11	11	783
Service Type			
FR		2	
DR		9	
Status			
Operational		6	
Implementation		1	
Planning		4	
Transportation Management Centers**	15	NA	NA
Service Type			
FR		14	
DR		3	
LR		1	
HR		1	
Status			
Operational		10	
Implementation		5	
Planning		4	

* Not all of these vehicles will contain APTS systems.

** These systems normally will not be operated by a transit agency.

TABLE 1. APTS DEPLOYMENT SUMMARY

SYSTEM	Transit Agencies Operating APTS Systems	Number of Separate Modes with APTS Systems	Total Vehicles Operated in These Modes*
Traffic Signal Priority	27	28	12,017
Service Type			
FR		24	
LR		4	
Status			
Operational		9	
Implementation		6	
Planning		7	
Testing		2	
Implementation/Testing		2	
Planning/Testing		2	
Real-Time Ridesharing**	1	NA	NA
Status			
Implementation		1	
Automated HOV Facility Monitoring**	3	NA	NA
Status			
Operational		1	
Testing		2	

* Not all of these vehicles will contain APTS systems.

** **These** systems normally will not be operated by a transit agency.

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Anchorage Public Transit, AK	48	FR	TR, DIG														
	15	DR	TR, DIG														
City of Huntsville, AL	12	FR															
	13	DR										X					
Mobile Transit Authority, AL	32	FR	(TR, DIG)														
	4	DR															
Montgomery Area Transit System, AL	40	FR						I									
	6	DR															
Community Res. Group, Springdale, AR	45	DR										X					
City of Mesa, AZ	23	FR								CC	CC						
	30	DR															
City of Phoenix Pub. Transit Div., AZ	385	FR		[GPS]			[X]			CC	CC						
	99	DR		(GPS)								(X)					
Glendale Dial-A-Ride, AZ	15	DR										X					
Maricopa County STS, Phoenix, AZ	70	DR										[X]					
Peoria Transit, AZ	6	DR										[X]					
Reg. Pub. Transp. Auth., Phoenix, AZ	45	FR								CC	CC						
	47	DR										(X)					
Scottsdale Connection, AZ	12	FR								CC	CC						
Sun Tran, Tucson, AZ	200	FR	(TR)	(GPS)	[X]	(X)	(X)	(W,I)		[MS]							

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
AC Transit, Oakland, CA	702	FR		(GPS)	(X)	{X}	{X}	(W)									
Alameda Ferry Services, CA	2	FB		[GPS]				[I]									
Antelope Valley TA, Lancaster, CA	42	FR															
	16	DR										(X)					
BART District, Oakland, CA	45	FR								MS	MS						
	590	HR					X	T		MS	MS						
Central Contra Costa TA, Concord, CA	116	FR								MS	MS						
	23	DR															
City of Merced Transit System, CA	12	FR	TR,DIG														
	6	DR															
City of Torrance Transit System, CA	52	FR	[X]	[GPS]	[X]	[X]		[P,W,I]		[X]					[X]		
	6	DR															
Culver City, Mun. Bus Lines, CA	23	FR								MS	MS						
Foothill Transit, West Covina, CA	215	FR								MS	MS						
Golden Gate BH&TD, San Francisco, CA	290	FR	DIG							[SC]	[SC]						
	15	DR															
	4	FB															
Livermore/Amador Valley TA, CA	34	FR						P									
	6	DR										X					
Lompoc Transit, CA	9	DR		(GPS)			{X}			(SC)							

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Long Beach Public Transp. Co., CA	193	FR					{X}	W									
	20	DR															
Los Angeles Co. TC/MTA, CA	2472	FR		[SO]		{X}	{X}	W						X	X		
	131	DR															
	54	LR						W						X			
	26	HR						W						X			
Modesto Area Express, CA	33	FR					{X}										
	9	DR		[GPS]								{X}					
Montebello Bus Lines, CA	55	FR		[GPS]						MS	MS			X			
	5	DR												X			
Muni, San Francisco, CA	1000	FR		SO				*T									
Municipal Bus Line, Gardena, CA	45	FR		LC						*SC							
	10	DR															
N. San Diego Co. TDB, Oceanside, CA	149	FR					X										
	30	DR															
OmniTrans, San Bernardino, CA	115	FR		[GPS]			{X}							X			
	87	DR										X					
Orange Co. TA, Orange, CA	470	FR	[TR,DIG]				{X}										
	240	DR															
	30	CR															

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Outreach, San Jose, CA	70	DR		(GPS)								X					
Penninsula Corridor, San Carlos, CA	93	CR								CC							
SamTrans, San Mateo, CA	320	FR		SO				P,W									
San Diego Transit Corp., San Diego, CA	302	FR	TR,DIG	[GPS]			X	(P)									
Santa Barbara Metro Transit Dist., CA	74	FR						P									
Santa Clara Co. Transit, San Jose, CA	464	FR		[X]						MS							
	50	LR								MS					X		
Santa Cruz Metro, Transit Dist., CA	90	FR		(*OTR)			X	(*)		[MS]							
	44	DR															
Santa Maria Area Transit, CA	9	FR															
	5	DR										X					
Santa Monica Mun. Bus Lines, CA	135	FR		OTR													
Simi Valley Transit, CA	9	FR								(*SC)							
	2	DR															
So. Cal. RR Auth., Los Angeles, CA	122	CR								CC							
So. Coast Area Transit, Oxnard, CA	88	DR								(SC)	(SC)						
Sonoma Co. Transit, Santa Rosa, CA	43	FR													[X]		
Stockton Metro. Transit District, CA	86	FR		(GPS)		(X)	(X)	(IP)							(X)		
	28	DR										X					

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Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Sunline TA, Thousand Palms, CA	39	FR						T									
	17	DR															
The Vine, Napa, CA	18	FR		GPS			X	P							X		
Vallejo Transit & San Fran. Ferry, CA	49	FR					X	P							(X)		
	1	FB															
Victor Valley TA, Victorville, CA	20	FR															
	23	DR										[X]					
Visalia City Coach, CA	21	FR	OTR														
	5	DR															
Yolo County TA, Woodland, CA	26	FR								[MS]							
	10	DR															
Yuba-Sutter Trans Auth. Yuba City, CA	12	FR	TR,DIG														
	9	DR										X					
City of Greeley-The Bus, CO	13	FR						I									
	5	DR															
Colorado Springs Transit System, CO	47	FR	[X]	(GPS)		[X]	(X)	[P]									
Regional Transp. District, Denver, CO	90	FR	DIG	GPS			X	P,T									
Transfort, Fort Collins, CO	22	FR						I									
Carey Transportation Inc., Milford, CT	55	FR	TR														
Connecticut Transit, Hartford, CT	373	FR						W		MS	MS						

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Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Gr. New Haven TD, Hamden, CT	36	DR								[X]		[X]					
Greater Bridgeport Transit Dist., CT	52	FR			W	W											
	24	DR										[X]					
Housatonic Area Reg. TA, Danbury, CT	20	FR										X					
	29	DR															
Northeast Transp. Co., Waterbury, CT	40	FR	DTR				X	[I]		MS	MS						
South East Area Transit, Norwich, CT	25	FR	TR														
Westport Transit District, Norwalk, CT	10	FR	TR														
	1	DR	TR														
Washington Metro. Area TA, DC	1506	FR	TR					P		*SC	*SC						
	746	HR															
Delaware Admin. for RT, Wilmington, DE	124	FR								[SC]							
Delaware Admin. for Spec. T, Dover, DE	120	FR								MS							
	100	DR								MS		X					
Arc Transit, Palatka, FL	18	FR		*GPS			*X			*MS							
	13	DR										*X					
Bay Co. Cncl. On Aging, Panama City, FL	38	DR										X					
Broward Co. Comm., Ft. Lauderdale, FL	200	FR		(GPS)	[X]	[X]	(X)	[X]									
	197	DR										[X]					
Compreh. Paratransit Serv., Miami, FL	150	DR	TR,DIG									X					

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
East Volusia TA, S. Daytona, FL	51	FR						T									
	37	DR										X					
Hillsborough Area Reg. TA, Tampa, FL	179	FR		SO	X			P									*X
	46	DR															
Jacksonville Transportation Auth., FL	183	FR		SO	X		X										
LYNX, Orlando, FL	204	FR		[GPS]	[X]		(X)	[P,T,W,I]	[X]	[SC]					[X]		
	90	DR										X	X				
Lee County Transit, Ft. Myers, FL	39	FR	TR														
	18	DR															
Manatee County Transit, Bradenton, FL	18	FR	TR														
	19	DR															
Metro-Dade Transit Auth., Miami, FL	619	FR	(TR,DIG)	(GPS)		(X)	X	P(I)									
	46	DR															
	136	HR	(TR,DIG)	(GPS)			X										
	29	AG	X				X										
Okaloosa Co. CT, Ft. Walton Beach, FL	45	DR										X					
Pasco Co. PTD, New Port Richey, FL	40	DR										(X)					
Red Top Transp. Inc., Miami, FL	22	FR															
	102	DR	TR	(GPS)								X					
Sarasota County TA, FL	34	FR	(TR,DIG)														

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Space Coast Area Transit, Cocoa, FL	27	FR	TR	(GPS)		(X)	(X)	(I)									
	17	DR	TR	(GPS)								X					
Taltran-City of Tallahassee, FL	54	FR						P,T		[MS]							
	13	DR										X					
Tri-Co. Com. RA, Ft Lauderdale, FL	31	CR	DIG					T		CC							
MARTA, Atlanta, GA	750	FR		(GPS)	(X)		(X)	(P,W,I)	(X)	(SC)				(X)			
	45	DR															
	240	HR															
City and County of Honolulu, HI	500	FR	DIG					P									
	100	DR	DIG									X					
Mayflower Contract Svc., Honolulu, HI	92	DR										X					
Bettendorf Transit System, IA	7	FR													[X]		
	4	DR															
City Bus Dept., Cedar Rapids, IA	38	FR		(GPS)				[I]									
	8	DR										[X]	X	X			
Des Moines Metropolitan TA, IA	85	FR		GPS				I									
	25	DR		GPS													
Metro. TA-Black Hawk Co., Waterloo, IA	18	FR															
	14	DR										X					

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Sioux City Transit System, IA	25	FR		[GPS]			(X)										
	7	DR		[GPS]								[X]					
Boise Urban Stages, ID	38	FR	TR					[I]									
	5	DR	TR														
Chicago Transit Authority, IL	2035	FR	(TR)	(GPS)	(X)	(X)	(X)	(W)		(MS)	(MS)				(*X)		
	1236	HR															
METRA, Chicago, IL	870	CR					(X)	P	X	X	X						
Madison Co. Trans. Dist., Granite City, IL	27	FR	(TR,DIG)	*GPS													
	29	DR	(TR,DIG)									X					
PACE, Chicago, IL	600	FR	TR	(GPS)	X	(X)	(X)	P		[MS]	[MS]				(X)		
Rock Island Co. MTD, IL	58	FR		(GPS)			(X)	(P,W)									
Gary Public Transp. Corp., IN	32	FR		(GPS)			(X)										
Gr. Lafayette Pub. Transp. Corp., IN	42	FR															
	8	DR										X					
Heart City Rider Prog., South Bend, IN	35	DR										X					
Muncie Indiana Transit System, IN	28	FR	TR,DIG														
	11	DR															
N. Indiana Commuter, Chesterton, IN	58	CR					X										
Tradewinds Rehab. Center, Gary, IN	32	DR		(GPS)								[X]					

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Wichita Metropolitan TA, KS	53	FR						T									
	22	DR										X					
Henderson Area Rapid Transit, KY	6	FR															
	2	DR										X					
TA of River City, Louisville, KY	257	FR		SO	[X]	X	X										
	15	DR															
City of Lafayette Transit, LA	16	FR												[X]			
	6	DR															
Louisiana Transit Co., Harahan, LA	29	FR						(I)									
Reg. Transit Auth., New Orleans, LA	500	FR		(GPS)		(X)	(X)	I									
Shreveport Area Transit System, LA	46	FR	TR,DIG	(GPS)													
	12	DR										(X)					
Cape Ann Transp. Auth., Gloucester, MA	10	FR	(TR,DIG)	(GPS)	(X)			(P)		(SC)							
	10	DR															
Gtr. Attleboro-Taunton RTA, MA	20	FR	TR,DIG														
	45	DR	TR,DIG	(GPS)								X	X				
Lowell Regional Transit Authority, MA	35	FR															
	33	DR										X					

Table 2. APTS DEPLOYMENTS IN US TRANSIT AGENCY

Agency or Location	Number of Vehicles	Service Type	Advanced Communications	Automated Vehicle Location	Automated Passenger Counters	Vehicle Component Monitoring	Automated Operations Software	Automated Transit Information	Multimodal Traveler Information	Automated Fare Payment	Multi-Carrier Fare Integration	Paratransit CAD	Mobility Manager	Transportation Management Centers	Traffic Signal Priority	Real-Time Ridesharing	Automated HOV Facility Monitoring
Mass. Bay Transp. Auth., Boston, MA	1047	FR	(TR,DIG)							(X)							
	262	DR															
	228	LR					X								X		
	410	HR					X	I									
	347	CR															
Montachusett TA,, Fitchburg, MA	27	FR															
	71	DR										X					
Pioneer Valley TA, Springfield, MA	177	FR		(X)		(X)				(X)					X		
	90	DR										[X]	X				
S.E. Regional TA, New Bedford, MA	73	FR															
	22	DR										X					
Mass Transit Admin, Baltimore, MD	935	FR	(TR)	(GPS)	[X]		(X)	(P,W)									
	62	DR										X					
	35	LR													X		
Ride-On, Montgomery Co., MD	250	FR		(GPS)		(X)	(X)	(P)						(X)	(X)		
Greater Portland Transit District, ME	21	FR						(W)									
The Reg. Transp. Prog., Portland, ME	18	DR										X					
W. Maine Transp. Services, Mexico, ME	35	DR										X					
Ann Arbor Transportation Auth., MI	77	FR	TR	(GPS)	X	(X)	X	(P,W,I)		(SC)							
	10	DR	TR	(GPS)			(X)			(SC)		X					

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Bay Metro. Transp. Auth., Bay City, MI	45	FR															
	5	DR										[X]					
Capitol Area Transp. Auth., Lansing, MI	59	FR		[GPS]				[I]									
	60	DR										X					
City of Jackson TA, MI	14	FR															
	28	DR										X					
Grand Rapids Area TA, MI	70	FR													[X]		
Muskegon Area Transit System, MI	16	FR	(TR,DIG)														
SMART, Detroit, MI	250	FR		(GPS)		(X)	(X)	[P]		[X]							
	150	DR		(GPS)								(X)					
Metro. Transp. Comm., Minneapolis, MN	810	FR	DIG	*GPS	X		X	P,W	X					X			
Bi-State Develop. Agency, St. Louis, MO	624	FR	DIG		X									X			
	68	DR										X					
Columbia Area Transit System, MO	11	FR						P									
	6	DR										X					
Kansas City Area TA, MO	232	FR		[SO]				P									
Transit Management of St. Joseph, MO	17	FR															
	3	DR										(X)					
City of Jackson Transit System, MS	46	FR													[X]		
	12	DR															

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Billings Metropolitan Transit, MT	5	FR	TR														
	12	DR										X					
Capitol Area Transit, Raleigh, NC	45	FR		[GPS]		X											
	15	DR		[GPS]								[X]					
Chapel Hill Transit, NC	54	FR															
	7	DR										[X]					
Charlotte Department of Transp., NC	146	FR						T(W)									
	40	DR										X					
Durham Area Transit, NC	32	FR															
	29	DR										X					
Fayetteville Area Sys. of Trans., NC	18	FR		[GPS]			[X]										
Gastonia Transit, NC	7	FR	[DIG]														
Winston-Salem Transit Authority, NC	58	FR	TR														
	19	DR	TR	*GPS						*SC		X	X				
Grand Forks City Bus, ND	13	FR	TR,DIG					*I							X		
	2	DR										[X]					
City of Omaha Transit Authority, NE	186	FR															
	16	DR										X					
StarTran, Lincoln, NE	54	FR						(P)									
	8	DR															

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Coop Allian. Seacoast Tr., Durham, NH	16	FR		[GPS]			[X]										
	132	DR		[GPS]								(X)					
Nashua Transit System, NH	7	FR															
	11	DR										(X)					
New Jersey Transit Corp., Newark, NJ	1900	FR	TR	SO	[X]	[X]	X	P		CC					[*X]		
	30	DR															
	25	LR	TR					P		CC					X		
	800	CR		[GPS]	[X]	(X)	(X)	(P,T,I)		CC							
Sun Tran, Albuquerque, NM	120	FR	TR	[GPS]			[X]	[X]	(X)								
	40	DR	TR	[GPS]								X					
Citizens Area Transit, Las Vegas, NV	189	FR						I									
	89	DR										X					
Reg. TC. Of Washoe Co., Reno, NV	63	FR															
	33	DR										X					
CNY Centro, Inc., Syracuse, NY	200	FR		[GPS]		[X]	[X]	[I]							[X]		
	17	DR															
Capital District TA, Albany, NY	232	FR		SO		X	X										
Command Bus Co. Inc., Brooklyn, NY	244	FR	TR							(MS)	(MS)						

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Dutchess Co. DMT., Poughkeepsie, NY	20	FR	TR														
	20	DR	TR									X					
	8	CR															
Green Bus Lines, Inc., Jamaica, NY	368	FR	TR							(MS)	(MS)						
Ithaca Tomkins Transit, NY	62	FR					(X)										
	12	DR										(X)					
Jamaica Buses, Inc., NY	200	FR	TR							(MS)	(MS)						
Liberty Lines Transit, Yonkers, NY	612	FR	TR							(MS)	(MS)						
Long Island Railroad, Jamaica, NY	1184	CR					X	P									
MTA Long Island Bus Line, NY	318	FR		(GPS)			[X]	[I]									
Metro No. Comm. RR Co., New York, NY	900	CR					X	[P,T]		CC							
Metro, Buffalo, NY	355	FR	TR	(GPS)	[X]	(X)	(X)	(I)									
	35	DR	TR	(GPS)								[X]					
	27	LR	TR			[X]	[X]	[X]									
New York Bus Tours, Inc. Bronx, NY	254	FR	TR							(MS)	(MS)						
New York City DOT, NY	115	FR	TR							(MS)	(MS)						
	109	DR	TR														
	7	FB	TR														
New York City Transit, NY	170	FR		(GPS)	[X]	[X]	[X]	[W]		(MS)	(MS)						
Niagara Scenic Bus Lines, Hamburg, NY	4	FR	(TR,DIG)														

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Port Auth. Of NY & NJ, New York, NY	12	FR								(MS)	(MS)						
Queens Surface Corp., Flushing, NY	264	FR	TR							(MS)	(MS)						
Rochester-Genesee RTA, Rochester, NY	215	FR		*GPS		X		P									
	21	DR															
Triboro Coach Corp., Jackson Hgts., NY	400	FR	TR							(MS)	(MS)						
Utica Transit Authority, NY	38	FR															
	8	DR										X					
Westchester Co. DOT, White Plains, NY	320	FR		SO				[I]									
	32	DR										X					
COTA, Columbus, OH	310	FR		SO	X			P									
	26	DR						P				X					
Hamilton City Lines, OH	7	DR										(X)					
Laketran, Grand River, OH	18	FR	TR,DIG	(GPS)	(X)		[X]	[P]									
	60	DR	TR,DIG	(GPS)													
Miami Valley RTA, Dayton, OH	284	FR															
	10	DR										X					
SORTA, Cincinnati, OH	380	FR		(GPS)	*X		(X)	(W.I)						[X]			
	33	DR										[X]					
Western Reserve TA, Youngstown, OH	43	FR															
	5	DR										X					

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Lane Transit District, Eugene, OR	95	FR	[DIG]	SO	X		X			(*MS)							
Rogue Valley Transit Dist., Medford, OR	17	FR															
	7	DR										[X]	[X]				
Salem Area Mass Transit District, OR	50	FR	TR,DIG							[X]							
Tri-Met, Portland, OR	630	FR	[X]	(GPS)	X		(X)	P							*X		
	140	DR	[X]	(GPS)								X					
Beaver County TA, Rochester, PA	13	FR	[X]	[GPS]			[X]		[X]								
	23	DR	[X]	[GPS]				P	[X]			[X]	[X]				
COLTS, Scranton, PA	34	FR		GPS			X	W,I									
Centre Area TA, State College, PA	39	FR						T,W									
	7	DR															
Mid Mon Valley TA, Charlerol, PA	19	FR					X										
Port Auth. of Allegh. Co., Pittsburgh, PA	887	FR			[X]		[X]	[X]							[*X]		
	61	LR															
S.E. Pennsylvania TA, Philadelphia, PA	1493	FR	OTR														
	256	DR															
	147	LR	OTR														
	376	HR	OTR				[X]										
	329	CR	OTR														

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Westmoreland Co. TA, Greensburg, PA	25	FR								[MS]							
	30	DR															
Williamsport Bureau of Transp Auth.,PA	20	FR	TR,DIG					I									
	2	DR															
York County Transportation, PA	25	FR															
	25	DR										X					
Metropolitan Bus Authority, San Juan, P	224	FR		OTR													
	14	DR															
Rhode Island Public TA, Providence, RI	241	FR															
	60	DR											X				
Greenville Transit Auth., Greenville, SC	24	FR										X					
	21	DR															
Santee Watenee RTA, Sumter, SC	10	FR			X												
	60	DR										[X]					
Rapid Transit System, Rapid City, SD	8	FR	TR,DIG														
	10	DR															
Chattanooga Area RTA, TN	55	FR								[SC]							
	10	DR															
Clarksville Transit System, TN	8	FR	TR														
	5	DR										X					

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Memphis Area Transit Authority, TN	191	FR															
	31	DR										X					
Amarillo Transit System, TX	17	FR															
	4	DR										X					
Capital Metro, TA, Austin, TX	316	FR		(GPS)	(*X)		(X)			SC					*X		
	13	DR		(GPS)						SC		X					
City of Brownsville Urban System, TX	17	FR	[TR,DIG]														
	8	DR										X					
Corpus Christi Reg Transit Auth., TX	70	FR		(GPS)	(X)	(X)	[X]	(T,W,I)							(X)		
	27	DR										(X)					
Dallas Area Rapid Transit, TX	1300	FR		(GPS)		(X)	[X]										*X
	369	DR		(GPS)								(X)					
Fort Worth Transportation Facility, TX	160	FR					[X]										
	30	DR															
Handitran Spec. Transit, Arlington, TX	14	DR										(X)					
Laredo Municipal Transit System, TX	30	FR						[I]									
	16	DR										X					
Metro, Houston, TX	1332	FR		[DR]		[X]	[X]	(P)	(X)					(X)			
	1549	DR														(X)	

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Sun Metro, El Paso, TX	160	FR		[GPS]	[X]		[X]										
	62	DR															
Transp. Svc. Dept., Grand Prairie, TX	7	DR								[SC]							
VIA, San Antonio, TX	529	FR		SO						[MS]				X			
	156	DR										X					
Waco Transit System, TX	16	FR	(TR,DIG)											(X)			
	4	DR												(X)			
Charlottesville Transit Service, VA	16	FR						[I]									
	5	DR															
Fairfax Connector Bus Sys., Lorton, VA	135	FR	TR														
		DR										X					
Peninsula TDC, Hampton, VA	125	FR					(X)	P				(X)					
	28	DR										(X)					
Potomac/Rappah. TC, Woodbridge, VA	20	FR	TR	(GPS)			(X)						(X)				
Tidewater Regional Transit, Norfolk, VA	161	FR		SO		X											
	75	DR										(X)					
Chittenden County TA, Burlington, VT	29	FR															
	9	DR										X					
Clark Co. Pub. Transp., Vancouver, WA	96	FR															
	20	DR	TR									X					

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King County Metro, Seattle, WA	1238	FR	X	SO	X		X	P	X	[X]	[X]			[X]	[X]		X
	408	DR								[X]	[X]	X	[X]				
	5	LR															
Kitsap Transit, Bremerton, WA	122	FR		(GPS)			(X)	(W)							X		
	33	DR		(GPS)								(X)					
Pierce Co. Ferry Op., Tacoma, WA	2	FB	DIG														
Pierce Transit, Tacoma, WA	182	FR	TR					[T,W]		[X]							
	75	DR										X					
Scn. Svc. Snohomish Co., Mukilteo, WA	34	DR										X					
Snohomish Co. Tran. BA, Lynwood, WA	230	FR						(P,W)		[X]	[X]			[X]	(*X)		
	40	DR										[X]					
Spokane Transit Authority, WA	143	FR						(T)									
	60	DR															
Washington State DOT, Seattle, WA	25	FB	DIG														
Whatcom Transp. Auth., Bellingham, WA	33	FR	(TR,DIG)														
	31	DR										X					
City of Waukesha, WI	20	FR						P									
	3	DR										[X]					
Green Bay Transit, WI	44	FR	DIG														
Kenosha Transit, WI	39	FR		[GPS]			[X]	I									

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Lacrosse Municipal Transit Utility, WI	28	FR	(TR,DIG)														
Madison Metro. Transit, WI	8	DR						(P)				(X)					
Milwaukee Co. Transit, Milwaukee, WI	550	FR	(TR)	(GPS)	[X]		[X]										
Sheyboygen Transit System, WI	33	FR		LC													
Kanawha Valley RTA, Charleston, WV	58	FR															
	8	DR										X					
Tri-State TA, Huntington, WV	30	FR								[SC]							
City of Casper, WY	9	DR	TR,DIG									X					
The City of Cheyenne Transit Prog., WY	23	DR	(TR,DIG)														



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