

Component				Source
Service	Function	Sub-Function	Requirement	
Parking Management Center(s)				
AM				
MUSA				
AUA				
	4.2.1.005.a		A list of authorized users shall be created, stored, updated and deleted for parking garage usage (pre-payment or billing).	Derived
	4.2.1.011		A user profile shall contain user account information.	Derived
	4.2.1.014		User profile data shall be accepted into the system manually.	Derived
	4.2.1.015		User profile data shall be accepted into the system electronically (standard format).	Derived
	4.2.1.016		User profile data shall be accepted into the system electronically (Non-standard format).	Derived
	4.2.1.016.a		All user profile data shall be checked for validity.	Derived
	4.2.1.018		A master user profile shall be created, stored, updated and deleted for each registered user.	Derived
	4.2.1.020		A user profile shall be able to be created, stored, updated, and deleted.	Derived
	4.2.1.021		User account information shall include account number (assigned by the system).	Derived
	4.2.1.021.a		User account information shall include a Personal Identification Number (PIN).	Derived
	4.2.1.022		User account information shall include user/company name.	Derived
	4.2.1.023		User account information shall include mailing address.	Derived
	4.2.1.024		User account information shall include phone number.	Derived
	4.2.1.024.a		User account information shall include a fax number.	Derived
	4.2.1.024.b		User account information shall include a computer address.	Derived
	4.2.1.025		User account information shall include user list (for multiple user accounts, like a company account).	Derived

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		4.2.1.026	User account information shall include credit card name(s), number(s), expiration date(s).	Derived
		4.2.1.027	User account information shall include financial institution name(s), account number(s).	Derived
		4.2.1.027.a	User account information shall include financial institution mailing address.	Derived
		4.2.1.027.b	User account information shall include a financial institution computer address.	Derived
		4.2.1.027.c	User account information shall include user account balance.	Derived
		4.2.1.027.d	Users shall be allowed to query user account information.	Derived
		4.2.1.027.e	User account information shall be validated with a financial institution via an account validation request.	Derived
		4.2.1.027.f	An account validation shall be received from a financial institution via an account validation notice.	Derived
		4.2.1.060.a	A profile confirmation shall be sent to each user registered for a service to confirm their registration.	Derived
		4.2.1.060.b	A profile confirmation shall be sent to each user registered for a service to verify the correctness of the information contained in their user profile.	Derived
		MSU		
		4.2.2.007	Service usage data shall be collected for parking.	Derived
		4.2.2.022	Service usage data collected for the Parking shall include date and time of each vehicle entrance and exit.	Derived
		4.2.2.023	Service usage data collected for the Parking shall include fees collected by service pricing structure.	Derived
		4.2.2.026	Service usage statistics shall be compiled based on analysis of service usage data over time.	Derived
		4.2.2.027	Service usage statistics shall be compiled for usage by individual account.	Derived
		4.2.2.028	Service usage statistics shall be compiled for usage levels for each service.	Derived

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		4.2.2.029	Service usage statistics shall be compiled for usage for each pricing structure within a service.	Derived
		4.2.2.030	Service usage statistics shall be created, stored, updated and deleted.	Derived
		SBP		
		4.2.3.007	Service invoices shall integrate charges for many transportation modes and services including Parking.	USR 3.1.4, 3.1.4.1, 3.1.4
		4.2.3.009	A service invoice shall be compiled for each user account based on the service usage data and service pricing structures.	Derived
		4.2.3.010	Third party billing (for companies or other groups of users under a single account) shall be supported.	USR 2.3.3.3, 3.1.1.5, 3.1
		4.2.3.011	Periodic billing (eg. monthly, quarterly, etc) shall be supported.	Sbus 56-5
		4.2.3.018	Service payments shall include payment for Parking.	SR 3.1.4.4, GGO 13.5.2,
		4.2.3.021	Service payments shall be accepted via credit card transactions.	USR 2.4.3.1, 3.1.0, 3.1.1
		4.2.3.023.a	Service payments shall be accepted via electronic funds transfers from financial institutions.	Derived
		4.2.3.025	A single payment media shall be supported for all transportation services.	USR 3.1.2.1
		4.2.3.026	A single payment media shall be supported for transportation services and other uses, such as retail purchases, utility bills, etc.	USR 3.1.2.6
		4.2.3.027	A payment confirmation shall be sent to each user.	USR 3.1.1.3
		4.2.3.029	Service payments that are insufficient or past due shall be detected.	Derived
		4.2.3.030	A delinquent account notice shall be sent to users with overdue or insufficient payments.	Derived
		PSPS		
		MPR		
		4.1.1.001	Pricing requirements shall be collected from public agencies.	Derived
		4.1.1.002	Pricing requirements shall be collected from travelers.	Derived

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		4.1.1.003	Pricing requirements shall be collected from private companies.	Derived
		4.1.1.003.a	Pricing requirements shall be collected, stored, and updated to support pricing strategy and pricing structure planning activities.	Derived
		4.1.1.004	Service usage statistics shall be assessed to determine additional requirements.	Derived
MPS				
		4.1.2.004	Pricing strategies shall support incentive programs (eg. favor certain transportation modes, routes or user groups).	USR 3.1.4.3, 3.1.5.2, 3.1
		4.1.2.005	Pricing strategies shall be created, stored, updated and deleted.	Derived
MSPS				
		4.1.3.007	Service pricing structure(s) shall be established for parking fees.	Derived
		4.1.3.008.a	Service pricing structure(s) that implement pricing requirements and pricing strategies shall include yearly price options.	Derived
		4.1.3.009	Service pricing structures, that implement pricing requirements and pricing strategies, shall include quarterly price options.	Derived
		4.1.3.010	Service pricing structures, that implement pricing requirements and pricing strategies, shall include monthly price options.	Derived
		4.1.3.011	Service pricing structures, that implement pricing requirements and pricing strategies, shall include per use price options.	Derived
		4.1.3.013	Service pricing structures, that implement pricing requirements and pricing strategies, shall include discounts.	Derived
		4.1.3.017	Service pricing structures, that implement pricing requirements and pricing strategies, shall include variable prices (for Public Transit and roadways).	USR 3.1.2.2, 3.1.5.1.1
		4.1.3.018	Service pricing structures, that implement pricing requirements and pricing strategies, shall include fees based on vehicle classification (for parking) and roadway tolls.	USR 3.1.3.3
		4.1.3.019	Service pricing structures shall be created, stored, updated and deleted.	Derived

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TCI				
	MTCD			
		CTCD		
		1.1.2.001	Travel conditions source data shall include traffic conditions.	MnE 1.3
		1.1.2.003	Travel conditions source data shall include weather conditions.	MnE 1.3
		1.1.2.005	Travel conditions source data shall include road surface conditions.	MnE 1.3
		1.1.2.007	Travel conditions source data shall include incident conditions.	MnE 1.3
		1.1.2.008	Travel conditions source data shall include planned event information.	MnE 1.3
		1.1.2.009	Travel conditions source data shall include parking conditions.	MnE 1.3
		1.1.2.012	Traffic conditions data shall be collected.	Derived
		1.1.2.013	Weather conditions shall be collected.	Derived
		1.1.2.017	Road surface conditions shall be collected from other systems.	Derived
		1.1.2.019	Planned event information shall be collected from humans	Derived
		1.1.2.020	Planned event information shall be collected from other systems.	Derived
		1.1.2.021	Parking conditions shall be collected.	Derived
		1.1.2.023	Travel conditions source data shall be accepted for input in to the system via voice.	Derived
		1.1.2.024	Travel conditions source data shall be accepted for input in to the system via fax	Derived
		1.1.2.025	Travel conditions source data shall be accepted for input into the system via paper copy	Derived
		1.1.2.026	Travel conditions source data shall be accepted for input into the system via magnetic medium	Derived
		1.1.2.028	Travel conditions source data shall be accepted in the system via manual entry.	Derived

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		1.1.2.029	Travel conditions source data shall be accepted into the system via electronic entry. (ITS standard format).	Derived
		1.1.2.029.a	Travel conditions source data shall be accepted into the system when in NTCIP format.	Derived
		1.1.2.029.b	Travel conditions source data shall be accepted into the system when in ITIS BAP format.	Derived
		1.1.2.030	Travel conditions source data shall be accepted into the system via electronic entry. (ITS non-standard format)	Derived
		1.1.2.031	Travel conditions source data received in a non-standard format shall be converted to standard format.	Derived
		1.1.2.032	Travel conditions source data shall be stored and maintained as an operator selectable option.	Derived
		1.1.2.033	Travel conditions source data that is no longer active shall be identified.	Derived
		1.1.2.034	Travel conditions source data that is no longer active shall be manually deletable.	Derived
		1.1.2.035	Travel conditions source data shall be logged upon initial receipt, change, and deletion.	Derived
		1.1.2.036	Condition start time shall be assigned when travel conditions source data is generated.	Derived
		1.1.2.037	Condition stop time shall be assigned to travel conditions source data.	MnE 2.2, 2.6.2, 1.5.3, 1.
		1.1.2.038	Expected duration shall be assigned when travel conditions source data is generated.	MnE 2.2, 2.6.2, 1.5.3, 1.
		1.1.2.041	Parking surveillance data shall be collected.	Derived
		1.1.2.043	Travel conditions source data shall include parking surveillance data.	Derived
		1.1.2.044	Incident conditions shall be collected from other systems.	Derived
		1.1.2.045	Multiple sources of travel conditions source data shall be compared to improve the accuracy of the data.	Derived
		1.1.2.046	Multiple sources of travel conditions source data shall be compared to improve the consistency of the data.	Derived

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		1.1.3.004	Travel conditions shall be referenced to a physical location.	MnE 1.1.1, 1.2
		1.1.3.005	Travel effects shall be referenced to a physical location.	MnE 1.1.1
		1.1.3.007	Link reference model data shall be stored and maintained.	Derived
		1.1.3.008	Travel conditions shall include current traffic conditions	USR 5.2.2.1
		1.1.3.009	Travel conditions shall include current weather conditions.	USR 5.2.2.1, GGO 10.5.
		1.1.3.010	Travel conditions shall include forecasted weather conditions.	MnE 1.1.2, 1.6.1, GGO
		1.1.3.011	Travel conditions shall include current road surface conditions.	USR 5.2.2.1
		1.1.3.012	Travel conditions shall include forecasted road surface conditions	Derived
		1.1.3.013	Travel conditions shall include current incident conditions.	USR 5.2.2.1
		1.1.3.014	Travel conditions shall include planned event information	MnE 1.6.1
		1.1.3.015	Travel conditions shall include current parking conditions	USR 1.1.2.1.6
		1.1.3.018	Travel conditions shall be stored and maintained.	Derived
		1.1.3.019	Traffic conditions shall include congestion	USR 5.2.2.1, MnE 1.4.1,
		1.1.3.020	Traffic conditions shall include freeway data.	USR 5.2.2.1, GGo 1.5.1
		1.1.3.021	Traffic conditions shall include traffic speeds	USR 5.2.2.1, USR 1.1.2.
		1.1.3.022	Traffic conditions shall include traffic levels (volume and occupancy)	USR 5.2.2.1, MnE 1.4.1,
		1.1.3.024	Weather conditions shall include rain.	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.025	Weather conditions shall include snow.	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.026	Weather conditions shall include fog.	MnE 1.1, 1.4.1, MnA 1.

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		1.1.3.027	Weather conditions shall include clear weather.	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.028	Forecast weather conditions shall be maintained.	MnE 1.1.2, 1.6.1, 2.5, 2.
		1.1.3.029	Road surface conditions shall include dry pavement.	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.030	Road surface conditions shall include wet pavement.	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.031	Road surface conditions shall include flooded pavement	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.032	Road surface conditions shall include snow covered pavement	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.033	Road surface conditions shall include icy pavement.	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.034	Road surface conditions shall include plowed pavement	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.035	Road surface conditions shall include salted pavement.	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.036	Road surface conditions shall include sanded pavement.	MnE 1.1, 1.4.1, MnA 1.
		1.1.3.037	Forecasted road surface conditions shall be maintained.	Derived
		1.1.3.038	Planned event information shall include current construction and maintenance.	USR 5.2.2.1, 1.1.2.1.1,
		1.1.3.039	Incident conditions shall include dangerous situations and hazards	USR 5.2.2.1, 1.1.2.1.1,
		1.1.3.040	Incident conditions shall include accidents	USR 5.2.2.1, 1.1.2.1.1,
		1.1.3.041	Planned event information shall include special events.	USR 5.2.2.1, 1.1.2.1.1,
		1.1.3.042	Future planned event information such as future construction and maintenance shall be maintained.	MnE 1.6.1, 2.5,2.5.1, 2.
		1.1.3.043	Future planned event information such as upcoming special events/event schedules shall be maintained.	MnE 1.6.1,2.5,2.5.1,2.6,
		1.1.3.044	Parking conditions shall include parking availability.	USR 1.1.2.1.6, MnE 1.5.

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		1.1.3.045	Parking conditions shall include parking lot status	USR 1.1.2.1.6, MnE 1.4.
		1.1.3.054	Travel conditions that are no longer active shall be identified.	Derived
		1.1.3.055	Travel effects that are no longer active shall be identified.	Derived
		1.1.3.056	Travel conditions shall be manually deletable.	Derived
		1.1.3.057	Travel effects shall be manually deletable.	Derived
		1.1.3.059	Travel effects shall be stored and maintained.	Derived
		1.1.3.060	Travel conditions shall be logged upon initial receipt, change and deletion.	Derived
		1.1.3.061	Travel effects shall be logged upon initial receipt, change and deletion.	Derived
		1.1.3.062	Agencies shall be able to access travel conditions without having to manually replicate the information.	MnA 1.1.2
		1.1.3.070	Travel effects shall include road/ramp closings.	GGO 2.10.3, MnE 1.5.2
		1.1.3.071	Travel effects shall include detours.	GGO 2.10.3, MnE 1.5.2
		1.1.3.075	Future travel effects shall be determined and maintained, including planned road/ramp closings.	MnE 1.7, MnE 1.7.1
		1.1.3.077	Travel effects that are no longer active shall be identified.	Derived
		1.1.3.083	Travel conditions shall be determined using traffic conditions.	Derived
		1.1.3.084	Travel conditions shall be determined using weather conditions	Derived
		1.1.3.085	Travel conditions shall be determined using road surface conditions.	Derived
		1.1.3.086	Travel conditions shall be determined using incident conditions	Derived
		1.1.3.087	Travel conditions shall be determined using planned event information.	Derived
		1.1.3.088	Travel conditions shall be determined using parking conditions.	Derived

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		1.1.3.091	Traffic conditions shall include arterial data.	Derived
		1.1.3.094	Parking conditions shall be determined using parking surveillance data.	Derived
	MTCI			
		DTCI		
		1.2.1.011	Travel conditions shall be formatted to the user-specific delivery device.	Derived
		1.2.1.012	As a goal, travel conditions will be made available to users 24 hours/day, 7 days/week, 365 days/year.	MnE 1.3.1, 2.4.1, GGO
		1.2.1.012.a	Travel conditions shall be made available within the agreed to hours of operation.	Derived
		1.2.1.012.b	Travel conditions shall be made available to humans	Derived
		1.2.1.012.c	Travel conditions shall be made available to other systems	Derived
		1.2.1.021	Travel conditions shall be distributed via electronic transfer to publicly owned computer.	MnE 1.3.3, 2.4.3, MnA
		1.2.1.023	Travel conditions shall be distributed via variable message signs.	MnE 1.3.3, 2.4.3, GGO
		1.2.1.037	Travel conditions shall be distributed via monitor.	USR 2.2.1.2.2.1.1
		DTTC		
		1.2.3.005	Travel conditions shall be received automatically upon occurrence of an event.	Derived
		1.2.3.006	Travel conditions shall be received automatically upon any change in an event.	Derived
		1.2.3.007	Travel conditions shall be received upon the issuing of a travel conditions request.	Derived
		1.2.3.024	Travel conditions shall contain active/or forecasted/future conditions.	Derived
		1.2.3.025	Forecasted travel conditions shall contain effects of active or forecasted/future conditions.	Derived
		1.2.3.027	Travel conditions shall contain conditions descriptions.	Derived
		1.2.3.030	Travel conditions information shall be compiled from travel conditions and travel effects for a local service area.	MnE 1.1.1,2.1.1

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		1.2.3.031	Travel conditions information shall be compiled from travel conditions and travel effects for the metro area.	GGO 1.10.2
		1.2.3.038	Travel conditions information shall be compiled from travel conditions and travel effects for a geographic region.	MnE 1.8, 2.7
		1.2.3.039	Travel conditions shall be compiled for the current time frame.	MnE 1.1.2, MnA 1.4.1,
		1.2.3.040	Travel conditions shall be compiled for the future time frame.	MnE 1.1.2, 1.6.1, .usr 1.
		1.2.3.041	Travel conditions shall be compiled for the forecasted time frame.	MnE 1.1.2, 1.6.1, USR 1
		DTTE		
		1.2.2.002	Travel effects shall be received automatically upon the occurrence of an event.	Derived
		1.2.2.003	Travel effects shall be received automatically upon any change in an event.	Derived
TPD	MTPD	CD		
		2.1.3.016	Directions information shall include travel cost.	Derived
		2.1.3.036	Travel cost shall include parking fees.	MnE 3.7.2, 4.3.3
		DR		
		2.1.2.009	Route information shall include parking locations.	MnE 3.7.3, 4.3.1
		2.1.2.010	Route information shall include parking availability.	MnE 3.7.3
		2.1.2.011	Route information shall include route travel cost (tolls, fares, parking).	MnE 3.7.2, 4.3.3, USR 1
TSI	MTSD	CTS		
		3.1.1.044	Traveler services source data shall include parking data.	Derived

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		3.1.1.048	Parking data shall be accepted from parking facilities.	Derived
	MTTS			
		MR		
		3.2.3.013	Users shall be able to make reservations for parking.	Derived