

European Parking Association



**EUROPEAN
PARKING
ASSOCIATION**
*Positively promoting
parking solutions
for sustainable mobility*

EPA Parking Data Essentials – Part 2B

European Regulated Parking Data Profile

Release 1.0

October 2024

© Copyright – European Parking Association, 2024 – All rights reserved

**DEVELOPMENT DRAFT - FOR REVIEW
(GENERAL RELEASE EDITION)**

Document Version Control

Date	Release	Status
26-Oct-24	Release 1.0	Published for General Review and Comment

Contributors

Jon Harrod Booth Principal Author

DEVELOPMENT DRAFT - FOR REVIEW
(GENERAL RELEASE EDITION)

European Regulated Parking Data Profile

Introduction

This spreadsheet presents the working to reach a European regulated data profile for parking-related data, associated with EU Intelligent Transport Systems Directive and related EU Delegated Regulations.

This spreadsheet has been prepared by the European Parking Association (EPA).

It forms a part of a series of publications by EPA called Parking Data Essentials.

This spreadsheet is a technical resource, that should be read in conjunction with Part 2A for the Parking Data Essentials series, a document entitled "Review of European Regulations concerning Parking Data". Part 2A is a document identifying the parking-related data required by the EU ITS Directive and associated Delegated Regulations. This spreadsheet, Part 2B, breaks down the regulatory requirement into specific data that EPA's analysis indicates meets the requirements from the Delegated Regulations. It links these to the specific data elements found within the Alliance for Parking Data Standards (APDS) technical specifications. The APDS technical specification has also been adopted as an ISO Standard, ISO TS 5206-1:2022, and forms the basis for the European DATEX II Parking Standards (CEN TS 16157-6:2022).

By its nature this is a technical resource.

The overall spreadsheet is separated into three distinct topics, each of which is contained in one worksheet. The topics are:

- SSTP - Safe and secure truck parking
- RTTI - Real-time traffic and travel information
- MMTIS - Multimodal traveller information services

European parking operators and others, depending on the services they offer, will find requirements for parking data under each topic.

In very broad terms, SSTP is relevant to supplier for truck parking services; RTTI is relevant to service providers who are offering fuel refuelling options and/or electric recharge facilities for vehicles; MMTIS is likely to be relevant to most parking operators.

Please see Part 2A of the Parking Data Essentials series, a document entitled "Review of European Regulations concerning Parking Data", for more detailed information on regulatory requirements and deadlines.

Each of the worksheets has the same basic structure (the MMTIS worksheet has additional columns).

The structure reads left to right. On the left hand side you find data topic items that can be found in the Delegated Regulations. In many cases these are non-specific. Moving to the right, provides a more specific view on data concepts that are expected to meet the requirement.

- Columns C & D are taken directly from the text of the referenced Delegated Regulation, see the Part 2A document.
- Column F provides referenceable identifier for data block, that are repeated later in the spreadsheet.
- Column G provides a brief commentary on the specific requirement from columns C & D.
- Column H outlines general data concepts to meet the requirement.
- Column I details specific data items needed to meet the general data concept needs.
- Columns K to M link the specific data item in column G to APDS data concepts.
- Column N provides the Minimum Regulated Parking Data Profile.

In column N each datatype is marked with one of five options:

M – Mandatory;
C – Conditional – this content will need to be supplied if the data supplier/parking operator operates those types of facilities;
X – to be excluded from the profile;
Set – using an assumption, which limits the choice of possible options, to one "hard-coded" option. In this case the field can be omitted from the profile as the value is known.
Optional – This represents important data which is not strictly required under the requirements of the Delegated Regulations, but can be provided if available.

European Regulated Parking Data Profile (SSTP)

Direct extract from Del. Reg.			Xref	Commentary	Profile data items	Profile data items	APDS data items	Comment	complete	Minimum
Delegated Regulation	Group	Item			GENERAL	SPECIFIC				Profile
885/2013 - information services for safe and secure parking places for trucks and commercial vehicles	Static data related to the parking areas									
	Identification information of parking area (name and address of the truck parking area)		1	Given name and address detail information concerning parking places (filtered from truck and commercial parking) - Del. Reg. presents this as limited to 200 characters (text string)	(parking place) identifier identifier	(parking place) name name	Place.identifier Place.name	Identified Area = VehicularAccess		M
	Location information of the entry point in the parking area (latitude/longitude)		2	Spatial grid coordinates for parking place entry - Del. Reg. presents this as 20 + 20 characters (text string)	(parking place entry) coordinates Coordinate referencing system	point (x) point (y)	VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates.epsgcode VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates.x VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates.y	Note: the Delegated Regulation states latitude/longitude but no further detail/precision. DATEX II by definition uses ETRS 89 as the coordinate referencing system. APDS is more flexible, but in general WGS84 coordinates are likely to be supplied.		Set M M
	Primary road identifier1/direction, and Primary road identifier2/direction if same parking accessible from two different roads		3	Road identifier & direction (1) & Road identifier & direction (2) - Del. Reg. presents this as (1) 20 + 20 characters and (2) 20 + 20 characters (text string)	Road identifier & direction (1) vehicular access (road name) (1) vehicular access (road identifier) (1) vehicular access (road destination) (1)	Road identifier & direction (2) vehicular access (road name) (2) vehicular access (road identifier) (2) vehicular access (road destination) (2)	VehicularAccess.Road.nameOfRoad VehicularAccess.Road.roadIdentifier VehicularAccess.Road.roadDestination VehicularAccess.Road.nameOfRoad VehicularAccess.Road.roadIdentifier VehicularAccess.Road.roadDestination			M M M M M M
	If needed, the indication of the Exit to be taken (limited to 100 characters)/Distance from primary road (integer 3) km or miles		4	(a) Exit/Junction name & (b) distance from primary road to parking place - Del. Reg. presents this as (a) limited to 100 characters and (b) integer 3	Exit/Junction name & distance Junction name distance from primary road		VehicularAccess.Road.RoadNode.junctionName VehicularAccess.Road.distanceToThisRoadroadDestination			M M
	Total number of free parking places for trucks			Parking spaces for trucks - Del. Reg. presents this as integer 3	Parking spaces for trucks total spaces		Place.CommonComponent.Characteristics.spacesTotal	Note this stated free parking places for trucks. Free is not assumed to mean with no cost charge. It is assumed to mean the accessible truck parking space capacity of the parking place - with no comment on current/planned occupancy.		M
	Price and currency of parking places			Price and currency of parking places - Del. Reg. presents this as limited to 300 characters (text string)	Right, rate, currency for parking (right specification) description ratetable name rate type currency rate line (x) ... sequence (x) ... type (x) ... duration start (x) ... duration end (x) ... increment period (x) ... value (x) ... min value (x) ... max value (x)		Place.RightSpecification.description Place.RightSpecification.Eligibility.RateTable.name Place.RightSpecification.Eligibility.RateTable.type Place.RightSpecification.Eligibility.RateTable.RateLineCollection.applicableCurrency Place.RightSpecification.Eligibility.RateTable.RateLineCollection.RateLine	Discuss: Do we need to reference eligibility criteria as a filter? APDS has no concept of a published singular rate (perhaps practice should say to do this for a defined period, or small number of periods)		X how to model indicative price?

European Regulated Parking Data Profile (SSTP)

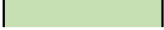
	Consent of the operator to make his contact information public	14	Operator information consent	Operator information consent - Yes/No				
	Dynamic data		Identifier	See Xref 10	Consent			
	Dynamic data on availability of parking places including whether a parking is: full, closed or number of free places which are available	15	number of parking spaces which are available	number of vacant spaces number of vacant spaces	Demand.quantity	is this sufficient?		M

DEVELOPMENT DRAFT - FOR REVIEW
 (GENERAL RELEASE EDITION)

European Regulated Parking Data Profile (RTTI)

Taken from the Delegated Regulations			General parking data concepts				Mapping to APDS data concepts				complete	Minimum Profile	
Direct extract from Del. Reg.	Delegated Regulation	Group	Item	Xref	Commentary	Profile data items GENERAL	Profile data items SPECIFIC	APDS data items	Comment				
	2022/670 - EU-wide real-time traffic information services		The types of data on infrastructure										
			location of recharging points for electric vehicles and the conditions for their use	21	name, location of electric vehicle recharging point and address & spatial coordinates of entrance	(parking place) identifier identifier (parking place) name name (parking place) address address (city) address (postcode) address (country) more detail? Address liners? (parking place entry) coordinates Coordinate referencing system point (x) point (y)		Place.Identifier Place.name Place.Address.city Place.Address.postcode Place.Address.countryCode VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates.postcode VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates.x VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates.y	Overlapping content with truck parking static information (filtered for refuelling locations (EV) - public) - whole network [Xref. 1 & 2] - use of Place...SupplementaryFacility.SupplementaryEquipment.RefillPoint.ElectricChargePoint Repeat - Logically could also contain space capacity. Filtered for EV charge points Addition: identifier for parking place - to support linking of data				
			location of refuelling points and stations for all other fuel types;	-	Price and currency of parking places, usage conditions	see Xref 20							
				-	name, location of refuelling points and address & spatial coordinates of entrance	see Xref 21				Discuss: How many of these would parking operators define unless a major feature in a parking place? how to identify in APDS? We have an IdentifiedArea - SupplementalFacility with subtype SupplementalEquipment.RefillPoint and instances of deliverySubstance (note this is a free text string, unlike the EnergySource associated with vehicle typing)			
				-	name, location of delivery areas and address & spatial coordinates of entrance	see Xref 21				spec/ctypes_reservedability?			
				-	number of parking spaces which are available	see Xref 15							
			availability of recharging points and stations for electric vehicles;	-	name, location of electric vehicle recharging point and address & spatial coordinates of entrance	see Xref 20				location filter with operatingRestriction = loadingZone / loadingZoneCommercial			
				-	capacity - demand and supply (incl. reservability)	capacity - demand and supply (incl. reservability) for charge points refill point identifier Possible to reserve		Place...IdentifiedArea.SupplementaryEquipment.RefillPoint.refillPointIndex Place...IdentifiedArea.SupplementaryEquipment.RefillPoint.reservability	filtered for refuelling locations (EV) - public) - whole network [Xref. 1 & 2] - use of Place...SupplementaryFacility.SupplementaryEquipment.RefillPoint.ElectricChargePoint				
				-	recharging tariff	see Xref 20				No capacity throughout information in APDS? No demand information			
			availability of refuelling points and stations for alternative fuel types;	-	name, location of refuelling points and address & spatial coordinates of entrance	see Xref 20				filtered for refuelling locations (EV) - public) - whole network [Xref. 1 & 2] - use of Place...SupplementaryFacility.SupplementaryEquipment.RefillPoint			
				-	capacity - demand and supply (incl. reservability)	see Xref 22				No capacity throughout information in APDS? No demand information			
				-	fuelling tariff	see Xref 20				Discuss: isn't this covered by items above?			
			price of ad hoc recharging/refuelling	-	name, location of refuelling points and address & spatial coordinates of entrance	see Xref 20							
				-	capacity - demand and supply (incl. reservability)	see Xref 22				No capacity throughout information in APDS? No demand information			

DEVELOPMENT DRAFT - FOR REVIEW
(GENERAL RELEASE EDITION)



-	fuelling tariff
---	-----------------

see Xref 20

	profile?
--	----------

DEVELOPMENT DRAFT - FOR REVIEW
(GENERAL RELEASE EDITION)

European Regulated Parking Data Profile (MMTIS)

Taken from the Delegated Regulations			General parking data concepts				Mapping to APDS data concepts			
Direct extract from Del. Reg.	Group	Item	Xref	Commentary	Profile data items GENERAL	Profile data items SPECIFIC	APDS data items	Comment	complete	Minimum Profile
2017/1926 - the provision of EU-wide multimodal travel information services										
The types of the static travel data										
Location search										
Points of interest (related to transport information) to which people may wish to travel,										
Location search - demand-responsive and personal transport			16	parking place name and address & spatial coordinates of entrance	(parking place) identifier identifier		Place.identifier	Logically could also contain space capacity. Addition: Identifier for parking place - to support linking of data		M
Location of parking places (on and off street)					(parking place) name name		Place.name			M
Park & Ride stops,					(parking place) address address:(city) address:(postcode) address:(country) more-detail?: Address:line1?		Place.Address.city Place.Address.postcode Place.Address.countyCode			X X X X
Park & Drive stops,					(parking place entry) coordinates Coordinate referencing system point (x) point (y)		VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates:langCode VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates VehicularAccess.PointLocation.PointByCoordinates.PointCoordinates	Note: the Delegated Regulation states latitude/longitude but no further detail (precision). DATEX II by definition uses ETRS 89 as the coordinate referencing system. APDS is more flexible, but in general WGS84 coordinates are likely to be supplied.		Set
Bike sharing stations,										M
Car-sharing stations,										M
Publicly accessible refuelling stations for petrol, diesel, CNG/LNG, hydrogen powered vehicles, charging stations for electric vehicles										
Secure bike parking (such as locked bike garages)										
Information service										
Where and how to buy tickets for scheduled modes, demand responsive modes and car parking (all scheduled modes and demand-responsive incl. retail channels, fulfilment methods, payment methods)										
Locations to buy/pay for parking, means of payment accepted (incl. brands), mode of payment			18	locations to buy/pay for parking, means of payment accepted (incl. brands), mode of payment	(parking place) identifier identifier		Place.identifier	Addition: Identifier for parking place - to support linking of data		
					(parking place) name name		Place.name			X
					payment method means of payment payment channels timing of when-to-pay brands-accepted parking-operating-mode?		Place.CommonComponents.PaymentMethod.means Place.CommonComponents.PaymentMethod.timing either: BrandsAcceptedText:brands-or-BrandsAcceptedCodeList:list	Discussion: APDS expressly did not include a facility to locate where to pay (e.g. location of ticket machines, pay at barrier, manned pay stations) potentially multiple see how this can be included: parking:ticket:whenMode2		X M X X X

DEVELOPMENT DRAFT - FOR REVIEW
(GENERAL RELEASE EDITION)

European Regulated Parking Data Profile (MMTIS)

<p>Location of parking places (on and off street)</p> <p>Park & Ride stops,</p> <p>Park & Drive stops,</p> <p>Bike sharing stations,</p> <p>Car-sharing stations,</p> <p>Secure bike parking (such as locked bike garages)</p>	-	parking place name and address & spatial coordinates of entrance	see Xref 16		see earlier notes	C	
	-	parking place name and address & spatial coordinates of entrance	see Xref 16		see earlier notes	C	
	-	parking place name and address & spatial coordinates of entrance	see Xref 16		see earlier notes	C	
	-	parking place name and address & spatial coordinates of entrance	see Xref 16		see earlier notes	C	
	-	parking place name and address & spatial coordinates of entrance	see Xref 16		see earlier notes	C	
	-	parking place name and address & spatial coordinates of entrance	see Xref 16		see earlier notes	C	
	-	parking place name and address & spatial coordinates of entrance	see Xref 16		see earlier notes	C	
	Information service	Where and how to buy tickets for scheduled modes, demand responsive modes and car parking (all scheduled modes and demand-responsive incl. retail channels, fulfilment methods, payment methods)					
	-	locations to buy/pay for parking, means of payment accepted (incl. brands), mode of payment	see Xref 17		see earlier notes	M	
	Information service (all modes)	Where how to pay for parking, including retail channels, fulfilment methods, payment methods					
	-	locations to buy/pay for parking, means of payment accepted (incl. brands), mode of payment	see Xref 17		see earlier notes	M	
	Detailed common standard and special fare query - scheduled transport and demand-responsive transport where relevant	Special fare products (offers with additional special conditions such as promotional fares, group fares, season passes, aggregated products combining different products, and add-on products such as parking and travel, minimum stay)					
	Information on parking tariffs	Price and currency of parking places (static information)	see Xref 6		see earlier notes	M	
	Types of the dynamic travel and traffic data						
	Information service on parking tariffs - demand-responsive transport and personal transport	Availability check and location - demand responsive transport and personal transport					
	Car parking spaces available (on and off-street)						
	Availability - total number of spaces, reported availability	see Xref 18		see earlier notes	C		
	Price and currency of parking places	see Xref 19		see earlier notes	C		

DEVELOPMENT DRAFT - FOR REVIEW (GENERAL RELEASE EDITION)

Discuss: This seems rather public transport oriented. Anything offered in this space sourced from parking suppliers?

Discuss: need to consider - beyond dynamic pricing for parking which is covered below, what else does this include? (should we just replicate?)

Additional optional key data

Entrance height	Minimum entrance height restriction	Maximum height	IdentifiedArea.VehicularAccess.AccessLaneSpecific.MaximumDimensions.maximumHeight	Optional
Hours of operation	Operating hours	Available 24 hours	Place.CommonComponents.Times.available24hours	Optional

European Regulated Parking Data Profile (MMTIS)

Validity start
Validity end
Specific period start
Specific period end

Place.CommonComponents.Times.Validity.OverallPeriod.start
Place.CommonComponents.Times.Validity.OverallPeriod.end
Place.CommonComponents.Times.Validity.OverallPeriod.Period.start
Place.CommonComponents.Times.Validity.OverallPeriod.Period.end

Possibly multiple
Possibly multiple

Optional
Optional
Optional

DEVELOPMENT DRAFT - FOR REVIEW
(GENERAL RELEASE EDITION)