Mapping of TPEG PKI to the DATEX Parking Publications v1.0

Reference: "prCEN ISO/TS 18234-7 Traffic and Travel Information (TTI) – TTI via Transport Protocol Expert Group (TPEG) – Part 7: TPEG-PKI"

PKI001VehicleType

Used DATEX II enums:

- VehicleTypeEnum (Level A)
- VehicleUsageEnum (Level A)
- VehicleType2Enum (Level B)

PKI001 VehilceType	DATEX II	
	enum	value
unknown	VehicleType2Enum	unknown
light goods vehicle	VehicleType2Enum	lightGoodsVehicle
heavy goods vehicle	VehicleType2Enum	heavyGoodsVehicle
pedal cycle	VehicleTypeEnum	bicycle
vehicle with trailer	VehicleTypeEnum	vehicleWithTrailer
high sided vehicle	VehicleTypeEnum	highSidedVehicle
minibus	VehicleType2Enum	minibus
taxi	VehicleUsageEnum	taxi
motorcycle	VehicleTypeEnum	motorcycle
small car	VehicleType2Enum	smallCar
large car	VehicleType2Enum	largeCar
camper car	VehicleType2Enum	motorhome
car with trailer	VehicleTypeEnum	carWithTrailer
car with caravan	VehicleTypeEnum	carWithCaravan
light goods vehicle with trailer	VehicleType2Enum	lightGoodsVehicleWithTrailer
heavyGoodsVehicleWithTrailer	VehicleType2Enum	heavyGoodsVehicleWithTrailer
motorcycle with side car	VehicleTypeEnum	motorcycleWithSideCar
moped	VehicleTypeEnum	moped
passenger car	VehicleType2Enum	passengerCar
truck	VehicleTypeEnum	lorry
bus	VehicleTypeEnum	bus

Table 1: Mapping of PKI0001

PKI002ParkingType

Used DATEX II enums:

- ParkingLayoutEnum
- ParkingUsageScenarioEnum
- UrbanParkingSiteTypeEnum
- InterurbanParkingSiteLocationEnum
- ParkingSpecialLoationEnum

Used DATEX II components:

- SpecialLocationParkingSite
- UrbanParkingSite

Used DATEX II attributes:

- parkingZone
- temporaryParking

PKI002 ParkingType	DATEX II	
	enum / attribute / component	value
unknown	ParkingLayoutEnum	unknown
special	SpecialLocationParkingSite	*(component)*
open space	ParkingLayoutEnum	openSpace
multi-storey	ParkingLayoutEnum	multiStorey
underground	ParkingLayoutEnum	underground
covered	ParkingLayoutEnum	covered
nested	ParkingLayoutEnum	nested
field	ParkingLayoutEnum	field
road side	UrbanParkingSiteTypeEnum	onStreetParking
drop-off with valet	ParkingUsageScenarioEnum	dropOffWithValet
drop-off mechanical	ParkingUsageScenarioEnum	dropOffMechanical
highway	InterUrbanParkingSiteLocationEnum	motorway
park and ride	ParkingUsageScenarioEnum	parkAndRide
car pool	ParkingUsageScenarioEnum	liftshare
campground	ParkingSpecialLocationEnum	campground
parking zone	parkingZone	*(MultilingualString)*
downtown	UrbanParkingSite	*(component)*
temporary	temporaryParking	true *(Boolean)*
kiss and ride	ParkingUsageScenarioEnum	kissAndRide

Table 2: Mapping of PKI0002

PKI003UserType

Used DATEX II enum: UserTypeEnum (1:1 mapping)

PKI002 ParkingType 1:1 DATEX II
unknown
all users
shoppers
hotel guests
subscribers
reservation holders
season ticket holders
registered disabled users
pregnant women
wheelchair users
elderly users
families
men
women
pensioners
students
staff
employees
customers
visitors
members
short term parker
long term parker
overnight parker
sport event away supporters
sport event home supporters

Table 3: Mapping of PKI0003

PKI004FuelType

Used DATEX II enums:

- FuelTypeEnum (Level A)
- FuelType2Enum (Level B)

PKI004 FuelType	DATEX II	
	enum	value
unknown	FuelType2Enum	unknown
all	FuelType2Enum	all
95 octane petrol	FuelType2Enum	petrol95Octane
98 octane petrol	FuelType2Enum	petrol98Octane
diesel	FuelTypeEnum	diesel
LPG	FuelTypeEnum	lpg
unleaded petrol	FuelType2Enum	petrolUnleaded
leaded petrol	FuelType2Enum	petrolLeaded
hydrogen	FuelTypeEnum	hydrogen
electric	FuelTypeEnum	battery
alcohol	FuelTypeEnum	ethanol

Table 4: Mapping of PKI0004

PKI005AvailableFeature

Used DATEX II enums:

- EquipmentTypeEnum
- AccessibilityEnum

PKI005 AvailableFeature	DATEX II	
	enum / attribute	value
unknown	EquipmentTypeEnum	unknown
none	EquipmentTypeEnum	none
wheelchair accessible	AccessibilityEnum	wheelChairAccessible
internet hotspots	EquipmentTypeEnum	internetWireless
electricity available	EquipmentTypeEnum	electricChargingStation
toilet	EquipmentTypeEnum	toilet
public telephone	EquipmentTypeEnum	publicPhone
shower facility	EquipmentTypeEnum	shower
vending machine	EquipmentTypeEnum	vendingMachine
information point	EquipmentTypeEnum	informationPoint

Table 5: Mapping of PKI0005

PKI006 EventType

Used DATEX II enums:

- PublicEventTypeEnum (Level A)
- PublicEventType2Enum (Level B)

PKI006 EventType	DATEX II	
	enum	**value**
unknown	PublicEventType2Enum	unknown
open-air concert	PublicEventType2Enum	openAirConcert
concert	PublicEventTypeEnum	concert
sound and light show	PublicEventType2Enum	soundAndLightShow
art event	PublicEventType2Enum	artEvent
flower event	PublicEventType2Enum	flowerEvent
beer festival	PublicEventType2Enum	beerFestival
food festival	PublicEventType2Enum	foodFestival
wine festival	PublicEventType2Enum	wineFestival
theatrical event	PublicEventType2Enum	theatricalEvent
firework display	PublicEventType2Enum	fireworkDisplay
sport and game	PublicEventTypeEnum	sportsMeeting
street festival	PublicEventType2Enum	streetFestival
film festival	PublicEventType2Enum	filmFestival
exhibition	PublicEventTypeEnum	exhibition
parade	PublicEventTypeEnum	parade

Table 6: Mapping of PKI0006

PKI007 Reservability

Used DATEX II enums:

- ReservationTypeEnum

PKI007 Reservability	DATEX II	
	enum	value
unknown	ReservationTypeEnum	unknown
partly reservable	ReservationTypeEnum	partly
reservable	ReservationTypeEnum	optional
not reservable	ReservationTypeEnum	notAvailable
reservation required	ReservationTypeEnum	mandatory

Table 7: Mapping of PKI0007

PKI008 FacilityType

Used DATEX II enums:

- ParkingUsageScenarioEnum

PKI008 FacilityType	DATEX II	
	enum	value
unknown	ParkingUsageScenarioEnum	unknown
mechanical parking	ParkingUsageScenarioEnum	dropOffMechanical
valet parking	ParkingUsageScenarioEnum	dropOffWithValet
automatic parking guidance	ParkingUsageScenarioEnum	automaticParkingGuidance
staff guides to space	ParkingUsageScenarioEnum	staffGuidesToSpace
vehicle lift	ParkingUsageScenarioEnum	vehicleLift

Table 8: Mapping of PKI0008

PKI009 SupervisionType

Used DATEX II enums:

- ParkingSupervisionEnum (1:1 mapping)

PKI009 SupervisionType 1:1 DATEX II
unknown
none
remote
on site
control centre on site
control centre off site
patrol

Table 9: Mapping of PKI0009

PKI010 SecurityType

Used DATEX II enums:

- ParkingSecurityEnum (1:1 mapping)

PKI010 SecurityType 1:1 DATEX II
none
security staff
cctv
dog

Table 10: Mapping of PKI0010

PKI011 AssociatedService

Used DATEX II enums:

- ParkingAdditionalServiceFacilityTypeEnum

PKI011 AssociatedService	DATEX II	
	enum	value
unknown	ServiceFacilityTypeEnum	unknown
fuel station	ServiceFacilityTypeEnum	petrolStation
restaurant	ServiceFacilityTypeEnum	restaurant
overnight accommodation	ServiceFacilityTypeEnum	overnighAccomodation
vehicle maintenance facility	ServiceFacilityTypeEnum	vehicleMaintenance
shop	ServiceFacilityTypeEnum	shop
kiosk	ServiceFacilityTypeEnum	kiosk
pharmacy	ServiceFacilityTypeEnum	pharmacy
cafe	ServiceFacilityTypeEnum	cafe
car wash	ServiceFacilityTypeEnum	carWash
repair shop	ServiceFacilityTypeEnum	sparePartsShopping

Table 11: Mapping of PKI0011

PKI012 ParkingStatus

Used DATEX II enums:

- ParkingStatusEnum
- ParkingConditionsEnum
- OpeningStatusEnum

Used DATEX II attributes:

- parkingNotAllowed

PKI012 ParkingStatus	DATEX II	
	enum / attribute	value
unknown	ParkingStatusEnum	unknown
full	ParkingStatusEnum	full
busy	ParkingStatusEnum	almostFull
vacant	ParkingStatusEnum	spacesAvailable
closed	OpeningStatusEnum	closed
no parking allowed	parkingNotAllowed	true *(Boolean)*
special conditions apply	ParkingConditionsEnum	specialParkingConditionsInForce

Table 12: Mapping of PKI0012

PKI013 PaymentMethod

Used DATEX II enums:

- MeansOfPaymentEnum
- PaymentCardTypesEnum
- ParkingPaymentModeEnum

PKI013 PaymentMethod	DATEX II	
	enum	**value**
unknown	MeansOfPaymentEnum	unknown
cash	MeansOfPaymentEnum	cash
credit card	PaymentCardTypesEnum	creditCard
electronic settlement	MeansOfPaymentEnum	electronicSettlement
ticket	ParkingPaymentModeEnum	payAtMachineOnFootPriorToExit
token	ParkingPaymentModeEnum	payByPrepaidToken
direct cash transfer	MeansOfPaymentEnum	directCashTransfer
RFID	MeansOfPaymentEnum	rfid
pre-pay card	PaymentCardTypesEnum	storedValueCard
mobile phone	MeansOfPaymentEnum	mobilePhone
smart card	MeansOfPaymentEnum	paymentCard

Table 13: Mapping of PKI0013

PKI014 SiteServed

Used DATEX II enums:

- ParkingSpecialLocationEnum (1:1 mapping)

PKI014 SiteServed 1:1 DATEX II
unknown
airport terminal
ferry terminal
vehicle-on-rail terminal
coach station
cable car station
shopping centre
public transport station
market
religious centre
convention centre
exhibition centre
skilift
cinema

Table 14: Mapping of PKI0014

PKI015 GateType

Used DATEX II enums:

- AccessCategoryEnum (nearly 1:1 mapping)

PKI015 GateType	DATEX II	
	enum	value
unknown	AccessCategoryEnum	unknown
vehicle entrance	AccessCategoryEnum	vehicleEntrance
vehicle exit	AccessCategoryEnum	vehicleExit
vehicle rental return	AccessCategoryEnum	rentalCarReturn
vehicle exit and entrance	AccessCategoryEnum	vehicleEntranceAndExit
pedestrian entrance	AccessCategoryEnum	pedestrianEntrance
pedestrian exit	AccessCategoryEnum	pedestrianExit

Table 15: Mapping of PKI0015

PKI016 ContactType

Used DATEX II attributes:

- Different attributes of component ContactDetails – see table

PKI016 ContactType	DATEX II
	attribute
unknown	contactUnknown *(attribute of Contact)*
telephone	contactDetailsTelephone
fax	contactDetailsFax
e-mail	contactDetailsEMail
internet address	urlLinkAddress
priority telephone	contactDetailsTelephone of role emergencyContact
main office telephone	contactDetailsTelephone of role parkingSiteAddress

Table 16: Mapping of PKI0016

PKI017 TransportType – not spported

TransportTpye is not supported in DATEX II.

PKI017 TransportType
pedestrian
underground rail
train
bus
ferry
tram
shuttle

Table 17: Transport type is not supported in DATEX II

PKI018 OpeningHoursType

- All aspects of opening hours can be modeled in DATEX using the OpeningTimes model.

PKI018 OpeningHoursType	
	atrribute
unknown	*see above (atrribute* openingTimesUnknown)
entry hours	*see above*
exit hours	*see above*
maximum stay time	maximumParkingDuration

Table 18: Mapping of PKI0018

PKI019 TermType

Used DATEX II enums:

- ParkingDurationEnum
- RestAreaActivityEnum

PKI019 TermType	DATEX II	
	enum	**value**
unknown	ParkingDurationEnum	unknown
short term	ParkingDurationEnum	shortTerm
long term	ParkingDurationEnum	longTerm
overnight	RestAreaActivityEnum	overnightParking
medium term	ParkingDurationEnum	shortTerm48hours

Table 19: Mapping of PKI0019

PKI020 Advice – not spported

Advice is not supported in DATEX II.

PKI020 Advice
unknown
shuttle service is available
use public transportation
use park and ride
admission ticket is also valid for public transport
no public transport available
extra parking capacity available

Table 20: Advice is not supported in DATEX II

PKI021 – partly supported

Used DATEX II enums:

- ParkingOccupancyTrendEnum

PKI021	DATEX II	
	enum	value
unknown	ParkingOccupancyTrendEnum	unknown
filling quickly	ParkingOccupancyTrendEnum	increasingQuickly
filling	ParkingOccupancyTrendEnum	increasing
filling slowly	ParkingOccupancyTrendEnum	increasingSlowly
unchanging	ParkingOccupancyTrendEnum	stable
emptying slowly	ParkingOccupancyTrendEnum	decreasingSlowly
emptying	ParkingOccupancyTrendEnum	decreasing
emptying quickly	ParkingOccupancyTrendEnum	decreasingQuickly

Table 21: Mapping of PKI0021

PKI022 FeeType

Used DATEX II enums:

- ChargeTypeEnum

PKI022 FeeType	DATEX II	
	enum	value
unknown	ChargeTypeEnum	unknown
minimum	ChargeTypeEnum	minimum
maximum	ChargeTypeEnum	maximum
additional	ChargeTypeEnum	additionalIntervalPrice
season ticket	ChargeTypeEnum	seasonTicket
temporary price	ChargeTypeEnum	temporaryPrice
night price	*can be modeled with time periods (on hourly basis as well as on date basis)*	
day price		
month price		
year price		
first hour price		
free parking		
flat	ChargeTypeEnum	flat

Table 22: Mapping of PKI0022

PKI ParkingStatus

Used DATEX II enums:

- ParkingSiteStatusEnum
- GroupOfParkingSitesStatusEnum
- OpeningStatusEnum
- ParkingFaultEnum
- ParkingScenarioEnum
- OperationTypeEnum
- ParkingConditionsEnum

Used DATEX II attribute:

- parkingNotAllowed

PKIParkingStatus	DATEX model	
	enum / attribute	value
all parkings full	GroupOfParkingSitesStatusEnum	allParkingsFull
parking closed	OpeningStatusEnum	closed
parking facility faulty	ParkingFaultEnum	unspecified
parking full	ParkingSiteStatusEnum	full
parking status unknown	ParkingSiteStatusEnum	unknown
enough spaces available	GroupOfParkingSitesStatusEnum	enoughSpacesAvailable
multi storey parkings full	GroupOfParkingSitesStatusEnum	multiStoreyParkingsFull
no more parking spaces available	GroupOfParkingSitesStatusEnum	noMoreParkingSpacesAvailable
no park and ride information	ParkingScenarioEnum & OperationTypeEnum	parkAndRide & unknown
no parking allowed	parkingNotAllowed	*true (Boolean)*
no parking information available	ParkingFaultEnum	noParkingInformationAvailable
normal parking restrictions lifted	ParkingConditionsEnum	normalParkingConditionsSuspended
only a few spaces available	ParkingSiteStatusEnum	almostFull
park and ride service not operating	ParkingUsageScenarioEnum & OperationStatusEnum	parkAndRide & notInOperation
park and ride service operating	ParkingUsageScenarioEnum & OperationStatusEnum	parkAndRide & inOperation
special parking restrictions in force	ParkingConditionsEnum	specialParkingConditionsInForce

Table 23: Mapping of PKI ParkingStatus

PKI ServiceDayType

Used DATEX II enums:

- DayEnum
- SpecialDayTypeEnum

PKI ServiceDayType	DATEX II	
	enum	value
unknown	SpecialDayType	unknown
monday	DayEnum	monday
tuesday	DayEnum	tuesday
wednesday	DayEnum	wednesday
thursday	DayEnum	thursday
friday	DayEnum	friday
saturday	DayEnum	saturday
sunday	DayEnum	sunday
weekdays	DayEnum	*use several day attributes*
weekends	DayEnum	
holiday	SpecialDayTypeEnum	holidays
publicHoliday	SpecialDayTypeEnum	publicHoliday
mondayToFriday	DayEnum	*use several day attributes*
mondayToSaturday	DayEnum	*use several day attributes*
sundaysAndPublicHolidays	DayEnum & SpecialDayTypeEnum	sunday & publicHoliday
schoolDays	SpecialDayTypeEnum	schoolDay
everyDay	DayEnum	*use several day attributes*
undefinedDayType	SpecialDayTypeEnum	undefinedDayType

Table 24: Mapping of PKI ServiceDayType