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Intelligent transport systems (ITS) — The use of personal ITS stations to support ITS service provision for travellers —

Part 2: General requirements for data exchange between ITS stations

Systèmes de transport intelligents (ITS) — Utilisation d'une station ITS personnelle pour la fourniture de services ITS aux voyageurs —

Partie 2: Exigences générales pour l'échange de données entre station ITS personnelle et autres stations ITS

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

A list of all parts in the ISO 13111 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document defines the data exchange protocol between personal ITS stations and other ITS stations which are used to implement the use case defined in ISO 13111-1.

This document defines protocol based on the data exchange message (DXM) at application level between personal ITS stations and other ITS stations, such as vehicle ITS stations, central ITS stations, roadside ITS stations, etc.

Applications supporting ITS service provisions and multimedia use via personal ITS stations need to harmonize with existing or developing documents in the relevant areas. These applications can be implemented using vehicle information, driver advisory systems, warning systems, entertainment systems, traffic information, public transport information, slow transportation system (non-motorized travel) information and multimodal navigation services based on the communication architecture and protocol defined in ISO/TR 13185-1 and other related documents listed below:

— the ISO 13185 series, defining the vehicle interface for provisioning and support of ITS services;

— ISO 19132, ISO 19133 and ISO 19134, defining the conceptual schema of location-based services, tracking and navigation services, and multimodal navigation services;

— the ISO 15031 series, defining emissions-related diagnostic data supported by vehicles in all countries requiring on-board diagnostics (OBD) compliance;

— ISO 22900-2, defining the modular vehicle communication interface (MVCI) diagnostic protocol data unit (D-PDU API) to separate the protocol data unit (PDU) from vehicle-specific protocols;

— the ISO 22902 series,[1)] defining provisions for multimedia and telematics based on automotive multimedia interface collaboration (AMI-C) specifications and reference documents for the automotive industry. The important logical element of the architecture is a vehicle interface;

— ISO 22837, defining the reference architecture for probe vehicle systems and a basic data framework for probe data;

— the ISO 27145 series, defining diagnostic data (emissions-related systems, future safety-related systems, etc.) to be supported by vehicles in all countries implementing the GTR (Global Technical Regulation) into their local legislation;

— ISO/TS 29284, defining the standardization of information, communication and control systems in the field of urban and rural surface transport, including intermodal and multimodal aspects thereof, traveller information, traffic management, public transport, commercial transport, emergency services and commercial services in the ITS field;

— SAE J2735, defining the support of interoperability among dedicated short-range communication (DSRC) applications through the use of standardized message sets, data frames and data elements.

1) Withdrawn.

Intelligent transport systems (ITS) — The use of personal ITS stations to support ITS service provision for travellers —

Part 2: General requirements for data exchange between ITS stations

1 Scope

This document defines the data exchange protocol used to implement use cases for applications based on the personal ITS station defined in ISO 13111-1, which provides and maintains ITS services to travellers, including drivers, passengers and pedestrians.

The ITS applications supported by this document include multimodal transportation information services and multimodal navigation services that are based on personal ITS stations in various application scenarios defined in ISO 13111-1.

The use case implementations described in this document refer to the architecture defined in ISO 21217 and ISO 13184.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15031-2, *Road vehicles — Communication between vehicle and external equipment for emissions-related diagnostics — Part 2: Guidance on terms, definitions, abbreviations and acronyms*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15031-2 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1.1
central ITS station
C-ITS-S
implementation of an ITS station in a central ITS subsystem

3.1.2
ITS service
service provided by a set of ITS station applications

3.1.3
ITS station
ITS-S
entity in a communication network, comprised of application, facilities, networking and access layer components as specified in ISO 21217, that operate within a bounded secure management domain

3.1.4
ITS-S application
functionality in an ITS station that uses ITS station services to connect to one or more other ITS station applications.

3.1.5
ITS-S service
communication functionality offered by an ITS station to an ITS station application

3.1.6
nomadic device
ND
device that provides communications connectivity via equipment such as cellular telephones, mobile wireless broadband (WIMAX, HC-SDMA, etc.), WiFi, etc. and includes short range links, such as Bluetooth, Zigbee, etc. to connect nomadic devices to the motor vehicle communications system network

3.1.7
personal ITS station
P-ITS-S
implementation of an ITS station with a personal ITS subsystem

Note 1 to entry: P-ITS-S is used to send the information of each user (drivers, passengers and pedestrians) to the other ITS station, and receives messages from other ITS stations which will be processed and presented on the user's terminal device according to the ITS station services and/or applications being executed.

3.1.8
roadside ITS station
R-ITS-S
system that receives and processes vehicular and pedestrian information within a certain zone and determines the situation, in order to provide safety warning and parking guide services to vehicles and pedestrians

Note 1 to entry: The system is installed at the roadside.

3.1.9
slow transportation system
non-motorized travel
transport system via pedestrians and bicycles

3.1.10
vehicle ITS station
V-ITS-S
implementation of an ITS station with a vehicle ITS subsystem

3.2 Abbreviated terms

AMI-C automotive multimedia interface collaboration

ASN.1 abstract syntax notation one

D-PDU diagnostic protocol data unit

DSRC dedicated short-range communication

DXM	data exchange message
GTR	Global Technical Regulation
ITS	intelligent transport systems
ITS-S	intelligent transport system-station
MVCI	modular vehicle communication interface
OBD	on-board diagnostics
P2C	product to consumer
P2R	product to retail
PDU	protocol data unit
POI	point of interest
POS	position
UC	use case
V-ITS-S	vehicle ITS station
V-ITS-SG	vehicle ITS station gateway

4 General requirements

The service consists of a request and response message. The data transmitted in request and response message are structured in ASN.1 in accordance with Annex A.

5 Use case implementations

5.1 Use case clusters overview

Table 1 provides an overview of use cases (UCs).

Table 1 — Use case clusters

No.	Title of use case cluster	Brief description
1	Slow transport information service: Get positioning information by accessing a roadside station through the P-ITS-S and R-ITS-S interaction interface	The use cases shall describe the data exchange between the P-ITS-S and R-ITS-S. UC 1.1—Requesting available positioning service UC 1.2—Requesting positioning information UC 1.3—Requesting positioning service from C-ITS-S UC 1.4—Requesting to turn ON/OFF the positioning service UC 1.5—Requesting/receiving roadside information

Table 1 *(continued)*

No.	Title of use case cluster	Brief description
2	Slow transport information service: Requesting slow transport and local transport information service	The use cases shall describe the slow transport information service and local transport service. UC 2.1—Requesting to download and update local transport network data UC 2.2—Requesting slow transport navigation information [pedestrian, bicycles, and information to support those with disabilities such as decreased personal mobility or decreased vison (amblyopia)] UC 2.3—Requesting to search surrounding facilities UC 2.4—Requesting/receiving surrounding commercial information
3	Slow transport information service: Requesting the safety evacuation passageway or emergency service	The use cases shall describe the evacuation information and emergency service for a P-ITS-S user. UC 3.1—Requesting the safety evacuation passageway UC 3.2—Requesting emergency service UC 3.3—Sending the rescue information UC 3.4—Receiving the rescue information UC 3.5—Closing the state of emergency
4	Transfer information service: Transfer information service in the parking lot	The use cases shall describe the transfer information service in the parking lot via P2C or P2R interaction interface. UC 4.1—Requesting/receiving the surrounding parking information UC 4.2—Requesting/receiving the surrounding real-time traffic information UC 4.3—Requesting the parking facility information UC 4.4—Requesting indoor navigation in a parking lot UC 4.5—Requesting the car location in the parking lot UC 4.6—Requesting pedestrian routing to the car location
5	Transfer information service: Requesting the transfer information service in an integrated transportation hub	The use cases shall describe the transfer information service in an integrated transportation hub for specific flight, train and/or bus lines. UC 5.1—Requesting/receiving the arrival and departure time UC 5.2—Requesting the station or platform for specific flight, train and/or bus lines UC 5.3—Requesting the transfer route UC 5.4—Requesting the express security channel
6	Multimodal traffic information service: Traffic and public transport information service via P2C or P2R interaction interface	The use cases shall describe the public transport service via P2C or P2R interaction interface. UC 6.1—Requesting public transport information UC 6.2—Requesting road traffic information UC 6.3—Requesting/Receiving real-time public transport information UC 6.4—Requesting/Receiving real-time transfer information

Table 1 *(continued)*

No.	Title of use case cluster	Brief description
7	Multimodal navigation service: Trip planning for travellers with a personal ITS station	The use cases shall describe the trip planning for travellers with a personal ITS station. UC 7.1—Requesting to search point of interest (POI) UC 7.2—Requesting trip and/or route planning UC 7.3—Request route information (routing, traffic information, waypoint, destination and eco-driving) UC 7.4—Requesting to modify the trip or re-routing UC 7.5—Requesting past trip information (route, arrival time) UC 7.6—Requesting multimodal navigation information
8	Multimodal navigation service: Vehicle service through the P2V interaction interface	The use cases shall describe the interface of the vehicle information service when a P-ITS-S connects to a V-ITS-S through the V-ITS-SG defined in the ISO 13185 series. UC 8.1—Requesting vehicle status UC 8.2—Requesting vehicle basic information UC 8.3—Requesting vehicle equipment status UC 8.4—Requesting remote control UC 8.5—Requesting mirror link
9	Communities activities: Share location through the interaction interface between the personal stations	The use cases shall describe the interaction interface between the personal ITS stations. UC 9.1—Requesting to open the location information UC 9.2—Requesting to participate in a location-based activity UC 9.3—Requesting data or information sharing UC 9.4—Requesting help UC 9.5—Removing the linkage/cancelling the session
10	Communities activities: Team travel	The use cases shall describe team travel when a group of vehicles (or bicycles) follows the lead vehicle on the way to the same destination. UC 10.1—Requesting team information UC 10.2—Requesting to join a team UC 10.3—Requesting to track the lead vehicle UC 10.4—Close the tracking or quit the team

5.2 Use case implementations

5.2.1 Get positioning information by accessing a roadside station through the P-ITS-S and R-ITS-S interaction interface

5.2.1.1 UC 1.1 — Requesting available positioning service

Table 2 provides a definition of UC 1.1 — Requesting available positioning service.

Table 2 — Definition of UC 1.1 — Requesting available positioning service

Use case	**Type of service**	Slow transport information service	ND in a given environment can get the local available positioning service.
	Cluster	1) Get positioning information by accessing a roadside station through the P-ITS-S and R-ITS-S interaction interface	
	Name	UC 1.1 Requesting available positioning service	
	Actor	P-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.1.1	`available_position_service`	requesting position service
	6.1.2	`position_service_list`	show position service list

5.2.1.2 UC 1.2 — RequestingPositioning information

Table 3 provides a definition of UC 1.2 — Requesting positioning information.

Table 3 — Definition of UC 1.2 — Requesting positioning information

Use case	**Type of service**	Slow transport information service	ND in a given environment can get the surrounding positioning information.
	Cluster	1) Get positioning information by accessing a roadside station through the P-ITS-S and R-ITS-S interaction interface	
	Name	UC 1.2 Requesting positioning information	
	Actor	P-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.1.1	`available_position_service`	search available position service through R-ITS-S
	6.1.3	`selected_position_service`	position service has selected
	6.1.4	`position_info_collection`	collect position information

5.2.1.3 UC 1.3 — Requesting positioning service from C-ITS-S

Table 4 provides a definition of UC 1.3 — Requesting position service from C-ITS-S.

Table 4 — Definition of UC 1.3 — Requesting positioning service from C-ITS-S

Use case	**Type of service**	Slow transport information service	ND in a given environment can get the surrounding positioning information. P-ITS-S sends the request to C-ITS-S or R-ITS-S. Then C-ITS-S or R-ITS-S returns the current location information to the P-ITS-S.
	Cluster	1) Get positioning information by accessing a roadside station through the P-ITS-S and R-ITS-S interaction interface	
	Name	UC 1.3 Requesting positioning service from C-ITS-S	
	Actor	P-ITS-S, R-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.1.5	`position_service_CITS`	send user ID and position service to C-ITS-S
	6.1.6	`current_position_info`	get current position information

5.2.1.4 UC 1.4 — Requesting to turn ON/OFF positioning service

Table 5 provides a definition of UC 1.4 — Requesting to turn ON/OFF positioning service.

Table 5 — Definition of UC 1.4 — Requesting to turn ON/OFF positioning service

Use case	**Type of service**	Slow transport information service	When the ND does not want to use location information, P-ITS-S may close(open)positioning service.
	Cluster	1) Get positioning information by accessing a roadside station through the P-ITS-S and R-ITS-S interaction interface	
	Name	UC 1.4 Requesting to turn ON/OFF positioning service	
	Actor	P-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.1.7	`return_status`	return the status before requesting

5.2.1.5 UC 1.5 — Requesting/receiving roadside information

Table 6 provides a definition of UC 1.5 — Requesting/receiving roadside information.

Table 6 — Definition of UC 1.5 — Requesting/receiving roadside information

Use case	**Type of service**	Slow transport information service	Individual users request to search the roadside information from P-ITS-S. Then, P-ITS-S sends the request to R-ITS-S which returns the roadside information and P-ITS-S receives the roadside information.
	Cluster	1) Get positioning information by accessing a roadside station through the P-ITS-S and R-ITS-S interaction interface	
	Name	UC 1.5 Requesting/receiving roadside information	
	Actor	P-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.1.8	`roadside_request`	request the roadside information
	6.1.9	`roadside_info_list`	show roadside information list

5.2.2 Requesting slow transport and local transport information service

5.2.2.1 UC 2.1 — Requesting to download and update local transport network data

Table 7 provides a definition of UC 2.1 — Requesting to download and update local transport network data.

Table 7 — Definition of UC 2.1 — Requesting to download and update local transport network data

Use case	**Type of service**	Slow transport information service	Individual users in the slow transport services area request to download and update local transport network data from the P-ITS-S. The P-ITS-S sends the request to the central intelligent transport systems; then it returns the data information about the current position.
	Cluster	2) Requesting slow transport and local transport information service	
	Name	UC 2.1 Requesting to download and update local transport network data	
	Actor	P-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.2.1	`local_transportnetwork`	show the local transport network
	6.2.2	`get_datapackage`	download data package

5.2.2.2 UC 2.2 — Requesting slow transport navigation information

Table 8 provides a definition of UC 2.2 — Requesting slow transport navigation information.

Table 8 — Definition of UC 2.2 — Requesting slow transport navigation information

Use case	**Type of service**	Slow transport information service	Individual users in the slow transport services area request slow transport navigation information from the P-ITS-S. The P-ITS-S sends the request to the C-ITS-S and returns the optimal navigation path.
	Cluster	2) Requesting slow transport and local transport information service	
	Name	UC 2.2 Requesting slow transport navigation information	
	Actor	P-ITS-S,C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.2.3	`slowtransport_navi`	navigation for slow transport
	6.2.4	`optimal_slowtransport_navi_path`	optimal navigation path for slow transport

5.2.2.3 UC 2.3 — Requesting to search surrounding facilities

Table 9 provides a definition of UC 2.3 — Requesting to search surrounding facilities.

Table 9 — Definition of UC 2.3 — Requesting to search surrounding facilities

Use case	**Type of service**	Slow transport information service	Individual users in the slow transport services area request to search the facilities from the P-ITS-S. The P-ITS-S sends the request to the C-ITS-S and returns the surrounding facilities.
	Cluster	2) Requesting slow transport and local transport information service	
	Name	UC 2.3 Requesting to search surrounding facilities	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.2.5	`search_surrounding_facilities`	search surrounding facilities
	6.2.6	`surrounding_facilities`	surrounding facilities list

5.2.2.4 UC 2.4 — Requesting/receiving surrounding commercial information

Table 10 provides a definition of UC 2.4 — Requesting/receiving surrounding commercial information.

Table 10 — Definition of UC 2.4 — Requesting/Receiving surrounding commercial information

Use case	**Type of service**	Slow transport information service	Individual users in the slow transport services area request to search the commercial information from the P-ITS-S. The P-ITS-S sends the request to the C-ITS-S which return the surrounding commercial information or receives the commercial information.
	Cluster	2) Requesting slow transport and local transport information service	
	Name	UC 2.4 Requesting/receiving surrounding commercial information	
	Actor	P-ITS-S,C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.2.7	`search_surrounding_commercial`	search surrounding commercial
	6.2.8	`surrounding_commercial_info`	commercial information list

5.2.3 Requesting the safety evacuation passageway or emergency service

5.2.3.1 UC 3.1 — Requesting the safety evacuation passageway

Table 11 provides a definition of UC 3.1 — Requesting the safety evacuation passageway.

Table 11 — Definition of UC 3.1 — Requesting the safety evacuation passageway

Use case	**Type of service**	Slow transport information service	Individual users of the P-ITS-S send the request to the central intelligent transport systems and it will return the optimal navigation path.
	Cluster	3) Requesting the safety evacuation passageway or emergency service	
	Name	UC 3.1 Requesting the safety evacuation passageway	
	Actor	P-ITS-S,C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.3.1	`safety_evacuation_passageway`	safety evacuation passageway
	6.3.2	`optimal_navigation_path`	optimal navigation path

5.2.3.2 UC 3.2 — Requesting/receiving emergency service

Table 12 provides a definition of UC 3.2 — Requesting/receiving emergency service.

Table 12 — Definition of UC 3.2 — Requesting/receiving emergency service

Use case	**Type of service**	Slow transport information service	An ND sends emergency information when it connects to the authorized centre system.
	Cluster	3) Requesting the safety evacuation passageway or emergency service	
	Name	UC 3.2 Requesting emergency service	
	Actor	P-ITS-S,C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.3.3	`emergency_info`	emergency information, e.g. evacuation passageway or emergency service
	6.3.4	`sending_status`	send current status

5.2.3.3 UC 3.3 — Sending the rescue information

Table 13 provides a definition of UC 3.3 — Sending the rescue information.

Table 13 — Definition of UC 3.3 — Sending the rescue information

Use case	**Type of service**	Slow transport information service	Connection between two NDs or one ND and a C-ITS-S.
	Cluster	3) Requesting the safety evacuation passageway or emergency service	
	Name	UC 3.3 Sending the rescue information	
	Actor	P-ITS-S,C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.3.5	`request_rescue_info`	request rescue information
	6.3.4	`sending_status`	send current status

5.2.3.4 UC 3.4 — Receiving the rescue information

Table 14 provides a definition of UC 3.4 — Receiving the rescue information .

Table 14 — Definition of UC 3.4 Receiving the rescue information

Use case	**Type of service**	Slow transport information service	When the C-ITS-S or P-ITS-S sends rescue information, an ND can receive the information.
	Cluster	3) Requesting the safety evacuation passageway or emergency service	
	Name	UC 3.4 Receiving rescue information	
	Actor	P-ITS-S,C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.3.6	`rescue_info`	rescue information
	6.3.4	`sending_status`	send current status

5.2.3.5 UC 3.5 — Closing the state of emergency

Table 15 provides a definition of UC 3.5 — Closing the state of emergency.

Table 15 — Definition of UC 3.5 — Closing the state of emergency

Use case	**Type of service**	Slow transport information service	When the C-ITS-S sends the status that the emergency has been processed, an ND can receive the information and close the current system state of emergency.
	Cluster	3) Requesting the safety evacuation passageway or emergency service	
	Name	UC 3.5 Closing the state of emergency	
	Actor	P-ITS-S,C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.3.7	`emergency_status`	current emergency status
	6.1.7	`return_status`	return current status

5.2.4 Transfer information service in the parking lot

5.2.4.1 UC 4.1 — Requesting/receiving the surrounding parking information

Table 16 provides a definition of UC 4.1 — Requesting/receiving the surrounding parking information.

Table 16 — Definition of UC 4.1 — Requesting/receiving the surrounding parking information

Use case	**Type of service**	Transfer information service	Individual users travelling by car and about to arrive are looking for empty parking spaces. After requesting the surrounding parking information from the P-ITS-S, the P-ITS-S sends the request to the C-ITS-S, V-ITS-S or R-ITS-S. These ITS stations return information about the current state of empty parking spaces and the P-ITS-S receives information.
	Cluster	4) Transfer information service in the parking lot	
	Name	UC 4.1 Requesting/receiving surrounding parking information	
	Actor	P-ITS-S, C-ITS-S, V-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.4.1	`request_surrounding_parking`	request surrounding parking information
	6.4.2	`surrounding_parking_info`	parking information

5.2.4.2 UC 4.2 — Requesting /receiving the surrounding real-time traffic information

Table 17 provides a definition of UC 4.2 — Requesting/receiving the surrounding real-time traffic information.

Table 17 — Definition of UC 4.2 — Requesting/receiving the surrounding real-time traffic information

Use case	**Type of service**	Transfer information service	Individual users travelling by car and about to leave request the surrounding real-time traffic information from the P-ITS-S, then the P-ITS-S sends the request to other P-ITS-S, C-ITS-S, V-ITS-S or R-ITS-S. Other ITS stations return the real-time traffic information about the current position and time. These are two data forms: one is the real-time traffic map, and the other is the surrounding real-time traffic data list, and the P-ITS-S receives the information.
	Cluster	4) Transfer information service in the parking lot	
	Name	UC 4.2 Requesting/receiving surrounding real-time traffic information	
	Actor	P-ITS-S ,C-ITS-S, V-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.4.3	`get_surrounding_traffic`	surrounding traffic information
	6.4.4	`surrounding_realtime_map`	surrounding real time digital map
	6.4.5	`surrounding_realtime_traffic_info`	surrounding real time traffic information list

5.2.4.3 UC 4.3 — Requesting the parking facility information

Table 18 provides a definition of UC 4.3 — Requesting the parking facility information.

Table 18 — Definition of UC 4.3 — Requesting the parking facility information

Use case	**Type of service**	Transfer information service	Individual users at the time of travel by car, having arrived at parking facility, request the parking facility information from the P-ITS-S, The P-ITS-S sends the request to a C-ITS-S or R-ITS-S. The C-ITS-S or R-ITS-S will return the surrounding facility information.
	Cluster	4) Transfer information service in the parking lot	
	Name	UC 4.3 Requesting the parking facility information	
	Actor	P-ITS-S,C-ITS-S,V-ITS-S,R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.4.6	`request_parking_facility`	request parking facility information
	6.4.7	`surrounding_facility_info`	parking facility information

5.2.4.4 UC 4.4 — Requesting indoor navigation in a parking lot

Table 19 provides a definition of UC 4.4, — Requesting indoor navigation in a parking lot.

Table 19 — Definition of UC 4.4 Requesting indoor navigation in a parking lot

Use case	**Type of service**	Transfer information service	Individual users travelling by car and arriving soon request the parking navigation information from the P-ITS-S. The P-ITS-S sends the request to a C-ITS-S or R-ITS-S, then the C-ITS-S or R-ITS-S will return the optimal navigation paths.
	Cluster	4) Transfer information service in the parking lot	
	Name	UC 4.4 Requesting indoor navigation in a parking lot	
	Actor	P-ITS-S, C-ITS-S, V-ITS-S, R-ITS-S	

Table 19 *(continued)*

Message	Subclause	Name	Description
	6.4.8	parkinglot_Indoor_navigation	indoor navigation in parking lot
	6.4.9	optimal_parkinglot_path_list	optimal path list of indoor navigation

5.2.4.5 UC 4.5 — Requesting the car location in the parking lot

Table 20 provides a definition of UC 4.5 — Requesting the car location in the parking lot.

Table 20 — Definition of UC 4.5 — Requesting the car location in the parking lot

Use case	Type of service	Transfer information service	The ND sends the request to a C-ITS-S or R-ITS-S, which returns the car location information.
	Cluster	4) Transfer information service in the parking lot	
	Name	UC 4.5 Requesting the car location in the parking lot.	
	Actor	P-ITS-S, R-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.4.10	request_car_POS	request car POS
	6.4.11	parkinglot_car_POS	current car position in the parking lot
	6.4.12	car_POS_info	car position information

5.2.4.6 UC 4.6 — Requesting pedestrian routing to the car location

Table 21 provides a definition of UC 4.6 — Requesting pedestrian routing to the car location.

Table 21 — Definition of UC 4.6 — Requesting pedestrian routing to the car location

Use case	Type of service	Transfer information service	Users request the slow transport navigation information from the P-ITS-S. The P-ITS-S sends the request to the C-ITS-S and returns the optimal navigation path.
	Cluster	4) Transfer information service in the parking lot	
	Name	UC 4.6 Requesting pedestrian routing to the car location.	
	Actor	P-ITS-S, R-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.4.11	cal_pedestrian_path	calculate pedestrian path
	6.4.12	optimal_pedestrian_path	optimal pedestrian path

5.2.5 Requesting the transfer information service in an integrated transportation hub

5.2.5.1 UC 5.1 — Requesting/receiving the arrival and departure time

Table 22 provides a definition of UC 5.1 — Requesting/receiving the arrival and departure time.

Table 22 — Definition of UC 5.1 — Requesting/receiving the arrival and departure time

Use case	Type of service	Transfer information service	Users of the P-ITS-S send the request to a C-ITS-S or R-ITS-S and receive the arrival and departure time of the specific public transport service.
	Cluster	5) Requesting the transfer information service in an integrated transportation hub	
	Name	UC 5.1 Requesting/receiving the arrival and departure time	
	Actor	P-ITS-S, C-ITS-S, R-ITS-S	

Table 22 *(continued)*

Message	Subclause	Name	Description
	6.5.1	public_transport_timetable	public transport timetable
	6.5.2	public_transport_time	public transport time(arrival/departure)

5.2.5.2 UC 5.2 — Requesting the station or platform for specific flight, train and/or bus lines.

Table 23 provides a definition of UC 5.2 — Requesting the station or platform for specific flight, train and/or bus lines.

Table 23 — Definition of UC 5.2 — Requesting the station or platform for specific flight, train and/or bus lines

Use case	Type of service	Transfer information service	Users of the P-ITS-S send the request to a C-ITS-S or R-ITS-S and receive the arrival and/or departure location of the specific public transport service.
	Cluster	5) Requesting the transfer information service in an integrated transportation hub	
	Name	UC 5.2 Requesting the station or platform of specific flight, train, and/or bus lines.	
	Actor	P-ITS-S, C-ITS-S,R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.5.3	cal_public_transport_path	calculate public transport path
	6.5.4	public_transport_location	public transport position

5.2.5.3 UC 5.3 — Requesting the transfer route

Table 24 provides a definition of UC 5.3 — Requesting the transfer route.

Table 24 — Definition of UC 5.3 — Requesting the transfer route

Use case	Type of service	Transfer information service	Individual users travelling by public transport request the public transport transfer information from the P-ITS-S. The P-ITS-S sends the request to other P-ITS-S, C-ITS-S and R-ITS-S. Other P-ITS-S, C-ITS-S and R-ITS-S return the optimal public transport transfer path.
	Cluster	5) Requesting the transfer information service in an integrated transportation hub	
	Name	UC 5.3 Requesting the transfer route	
	Actor	P-ITS-S, C-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.5.5	request_transfer_info	request transfer information
	6.5.6	optimal_transfer_path	optimal transfer path

5.2.5.4 UC 5.4 — Requesting the express security channel

Table 25 provides a definition of UC 5.4 — Requesting the express security channel.

Table 25 — Definition of UC 5.4 — Requesting the express security channel

Use case	**Type of service**	Transfer information service	Individual users travelling by public transport request the public transport transfer information from the P-ITS-S. The P-ITS-S sends the request to other P-ITS-S, C-ITS-S, and R-ITS-S. Other P-ITS-S, C-ITS-S, and R-ITS-S return the optimal public transport transfer path.
	Cluster	5) Requesting the transfer information service in an integrated transportation hub	
	Name	UC 5.4 Requesting the express security channel.	
	Actor	P-ITS-S, C-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.5.7	`request_express_channel`	request express path
	6.5.8	`optimal_security_path`	request optimal security path

5.2.6 Traffic and public transport information service via P2C or P2R interaction interface

5.2.6.1 UC 6.1 — Requesting public transport information

Table 26 provides a definition of UC 6.1 — Requesting public transport information.

Table 26 — Definition of UC 6.1 — Requesting public transport information

Use case	**Type of service**	Multimodal traffic information service	Individual users travelling by public transport request the public transport navigation information from the P-ITS-S. The P-ITS-S sends the request to other P-ITS-S, C-ITS-S and R-ITS-S. Other P-ITS-S, C-ITS-S, and R-ITS-S return the optimal public transport transfer path.
	Cluster	6) Traffic and public transport information service via P2C or P2R interaction interface	
	Name	UC 6.1 Requesting the public transport navigation information.	
	Actor	P-ITS-S, C-ITS-S, R-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.6.1	`request_public_transport`	request public transport service
	6.6.2	`optimal_public_transport_path`	optimal public transport path

5.2.6.2 UC 6.2 — Requesting road traffic information

Table 27 provides a definition of UC 6.2 — Requesting road traffic information.

Table 27 — Definition of UC 6.2 — Requesting road traffic information

Use case	**Type of service**	Multimodal traffic information service	When users travel by taxi and mix with other public transport and use road traffic information to estimate the travel time for the total journey, a C-ITS-S returns the optimal public transport transfer path.
	Cluster	6) Traffic and public transport information service via P2C or P2R interaction interface	
	Name	UC 6.2 Requesting road traffic information.	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.6.3	`request_traffic_info`	request road traffic information
	6.6.4	`road_traffic_info`	road traffic information

5.2.6.3 UC 6.3 — Requesting/receiving real-time public transport information

Table 28 provides a definition of UC 6.3 — Requesting/receiving real-time public transport information.

Table 28 — Definition of UC 6.3 — Requesting/receiving real-time public transport information

Use case	**Type of service**	Multimodal traffic information service	Individual users travelling by public transport request the public transport real-time information from the P-ITS-S. The P-ITS-S sends the request to other P-ITS-S and C-ITS-S. Other P-ITS-S and C-ITS-S return the reach state of a public transport vehicle in a station, or receive the information.
	Cluster	6) Traffic and public transport information service via P2C or P2R interaction interface	
	Name	UC 6.3 Requesting/Receiving real-time public transport information	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.6.5	`request_public_transport_info`	request real time public transport information
	6.6.6	`public_transport_vehicle_status`	public transport vehicle status

5.2.6.4 UC 6.4 — Requesting/receiving real-time transfer information

Table 29 provides a definition of UC 6.4 — Requesting/receiving real-time transfer information.

Table 29 — Definition of UC 6.4 — Requesting/receiving real-time transfer information

Use case	**Type of service**	Multimodal traffic information service	Individual users travelling by public transport request the surrounding real-time transfer information from the P-ITS-S. The P-ITS-S sends the request to other P-ITS-S and C-ITS-S. Other P-ITS-S and C-ITS-S return the real-time transfer information about the current position and time. There are two data forms: one is the real-time transfer map, the other is the surrounding real-time transfer data list, and the P-ITS-S receives the information.
	Cluster	6) Traffic and public transport information service via P2C or P2R interaction interface	
	Name	UC 6.4 Requesting/receiving real-time transfer information	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.6.7	`request_realtime_transfer_info`	request real-time transfer information
	6.6.8	`surrounding_realtime_tranfers_map`	digital map for transfer in area
	6.6.9	`surrounding_realtime_tranfer_info`	real-time transfer information

5.2.7 Trip planning for travellers with a personal ITS station

5.2.7.1 UC 7.1 — Requesting to search point of interest (POI)

Table 30 provides a definition of UC 7.1 — Requesting to search point of interest (POI).

Table 30 — Definition of UC 7.1 — Requesting to search point of interest (POI)

Use case	**Type of service**	Multimodal traffic information service	Users request to search POIs from the P-ITS-S, which sends the request to a C-ITS-S and returns the POI inside the search area.
	Cluster	7) Trip planning for travellers with a personal ITS station	
	Name	UC 7.1 Requesting to search point of interest (POI)	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.7.1	`search_POI`	request to search POI
	6.7.2	`POI_info`	POI information list in certain area

5.2.7.2 UC 7.2 — Requesting trip and/or route planning

Table 31 provides a definition of UC 7.2 — Requesting trip and/or route planning.

Table 31 — Definition of UC 7.2 — Requesting trip and/or route planning

Use case	**Type of service**	Multimodal traffic information service	An ND requests route planning when it connects to the authorized centre system.
	Cluster	7) Trip planning for travellers with a personal ITS station	
	Name	UC 7.2 Requesting trip and/or route planning	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.7.3	`planning_route`	request planning route
	6.7.4	`planningroute_return_status`	return current status

5.2.7.3 UC 7.3 — Requesting route information (routing, traffic information, waypoint, destination and eco-driving)

Table 32 provides a definition of UC 7.3 — Requesting route information (routing, traffic information, waypoint, destination and eco-driving).

Table 32 — Definition of UC 7.3 — Request route information (routing, traffic information, waypoint, destination and eco-driving)

Use case	**Type of service**	Multimodal traffic information service	An ND requests route planning when it connects to the authorized centre system.
	Cluster	7) Trip planning for travellers with a personal ITS station	
	Name	UC 7.3 Requesting route information (routing, traffic information, way-point, destination and eco-driving).	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.7.5	`request_route_info`	request route information
	6.7.6	`route_return_status`	return current status

5.2.7.4 UC 7.4 — Requesting to modify the trip or re-routing

Table 33 provides a definition of UC 7.4 — Requesting to modify the trip or re-routing.

Table 33 — Definition of UC 7.4 — Requesting to modify the trip or re-routing

Use case	**Type of service**	Multimodal traffic information service	An ND requests to modify the route when it connects to the authorized centre system.
	Cluster	7) Trip planning for travellers with a personal ITS station	
	Name	UC 7.4 Requesting to modify the trip or rerouting	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.7.7	`request_modify_trip`	request modify the planning route
	6.7.8	`modifytrip_return_status`	return status

5.2.7.5 UC 7.5 — Requesting past trip information (route, arrival time)

Table 34 provides a definition of UC 7.5 — Requesting past trip information (route, arrival time).

Table 34 — Definition of UC 7.5 — Requesting past trip information (route, arrival time)

Use case	**Type of service**	Multimodal traffic information service	An ND requests sending the past trip when it connects to the authorized centre system.
	Cluster	7) Trip planning for travellers with a personal ITS station	
	Name	UC 7.5 Requesting past trip information (route, arrival time)	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.7.9	`request_pasttrip_info`	request history information of trip
	6.7.10	`pasttrip_return_status`	return the status

5.2.7.6 UC 7.6 — Requesting multimodal navigation information

Table 35 provides a definition of UC 7.6 — Requesting multimodal navigation information.

Table 35 — Definition of UC 7.6 — Requesting multimodal navigation information

Use case	**Type of service**	Multimodal traffic information service	Individual users in the multimodal transport services area request the multimodal traffic navigation information from P-ITS-S. Then, P-ITS-S sends the request to the central intelligent transport systems which return the optimal navigation path.
	Cluster	7) Trip planning for travellers with a personal ITS station	
	Name	UC 7.6 Requesting multimodal navigation information	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.7.11	`request_multimodal_navigation_info`	request multimodal navigation information
	6.7.12	`multimodal_optimal_navigationpath`	optimal multimodal path

5.2.8 Vehicle service through the P2V interaction interface

5.2.8.1 UC 8.1 — Requesting vehicle status

Table 36 provides a definition of UC 8.1 — Requesting vehicle status.

Table 36 — Definition of UC 8.1 — Requesting vehicle status

Use case	**Type of service**	Multimodal traffic information service	An ND requests the vehicle status when it connects to the authorized vehicle.
	Cluster	8) Vehicle service through the P2V interaction interface	
	Name	UC 8.1 Requesting vehicle status	
	Actor	P-ITS-S, V-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.8.1	`request_vehicle_status`	request vehicle status
	6.8.2	`vehicle_status`	vehicle status

5.2.8.2 UC 8.2 — Requesting vehicle basic information

Table 37 provides a definition of UC 8.2 — Requesting vehicle basic information

Table 37 — Definition of UC 8.2 — Requesting vehicle basic information

Use case	**Type of service**	Multimodal traffic information service	An ND requests the vehicle basic information when it connects to the authorized vehicle.
	Cluster	8) Vehicle service through the P2V interaction interface	
	Name	UC 8.2 Requesting vehicle basic information	
	Actor	P-ITS-S, V-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.8.3	`request_vehicle_info`	request vehicle information
	6.8.4	`vehicle_info`	vehicle information

5.2.8.3 UC 8.3 — Requesting vehicle equipment status

Table 38 provides a definition of UC 8.3 — Requesting vehicle equipment status.

Table 38 — Definition of UC 8.3 — Requesting vehicle equipment status

Use case	**Type of service**	Multimodal traffic information service	An ND requests the vehicle equipment status when it connects to the authorized vehicle.
	Cluster	8) Vehicle service through the P2V interaction interface	
	Name	UC 8.3 Requesting vehicle equipment status	
	Actor	P-ITS-S, V-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.8.5	`request_vehicle_equipment`	request vehicle equipment
	6.8.6	`vehicle_equipment_status`	vehicle equipment status

5.2.8.4 UC 8.4 — Requesting remote control

Table 39 provides a definition of UC 8.4 — Requesting remote control.

Table 39 — Definition of UC 8.4 — Requesting remote control

Use case	**Type of service**	Multimodal traffic information service	An ND may send a remote control instruction to the V-ITS-S when it connects to the authorized vehicle via C-IT-S.
	Cluster	8) Vehicle service through the P2V interaction interface	
	Name	UC 8.4 Requesting remote control	
	Actor	P-ITS-S, V-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.8.7	`remote_control`	remote control
	6.8.8	`sending_status`	sending current status
	6.8.9	`execution_status`	execution status

5.2.8.5 UC 8.5 — Requesting mirror link

Table 40 provides a definition of UC 8.5 — Requesting mirror link.

Table 40 — Definition of UC 8.5 — Requesting mirror link

Use case	**Type of service**	Multimodal traffic information service	Establish a mirror link between the components of the P-ITS-S and V-ITS-S when they are connected.
	Cluster	8) Vehicle service through the P2V interaction interface	
	Name	UC 8.5 Requesting mirror link	
	Actor	P-ITS-S, V-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.8.10	`mirrorlink`	mirror link
	6.1.7	`return_status`	return status

5.2.9 Share location through the interaction interface between the personal stations

5.2.9.1 UC 9.1 — Requesting to open the location information

Table 41 provides a definition of UC 9.1 — Requesting to open the location information.

Table 41 — Definition of UC 9.1 — Requesting to open the location information

Use case	**Type of service**	Communities activities	An ND requests another ND's position information when it connects to another ND.
	Cluster	9) Share location through the interaction interface between the personal stations	
	Name	UC 9.1 Requesting to open the location information	
	Actor	P-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.9.1	`request_POS_info`	reqest locationinformation
	6.1.7	`return_status`	return status (accept or reject)

5.2.9.2 UC 9.2 — Requesting to participate in a location-based activity

Table 42 provides a definition of UC 9.2 — Requesting to participate in a location-based activity.

Table 42 — Definition of UC 9.2 — Requesting to participate in a location-based activity

Use case	**Type of service**	Communities activities	An ND invites other ND to participate in an activity when it connects to another ND.
	Cluster	9) Share location through the interaction interface between the personal stations	
	Name	UC 9.2 requesting to participate in location-based activity	
	Actor	P-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.9.2	`request_participate_activity`	request participate activity
	6.1.7	`return_status`	return status (accept or reject)

5.2.9.3 UC 9.3 — Requesting data or information sharing

Table 43 provides a definition of UC 9.3 — Requesting data or information sharing.

Table 43 — Definition of UC 9.3 — Requesting data or information sharing

Use case	**Type of service**	Communities activities	An ND requests another ND to share information when it connects to another ND.
	Cluster	9) Share location through the interaction interface between the personal stations	
	Name	UC 9.3 requesting data or information sharing	
	Actor	P-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.9.3	`request_info_sharing`	request sharing information
	6.9.4	`share_info`	sharing information

5.2.9.4 UC 9.4 — Requesting help

Table 44 provides a definition of UC 9.4 — Requesting help.

Table 44 — Definition of UC 9.4 — Requesting help

Use case	**Type of service**	Communities activities	An ND gets help information from other ND when it connects to another ND.
	Cluster	9) Share location through the interaction interface between the personal stations	
	Name	UC 9.4 Requesting help	
	Actor	P-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.9.5	`request_help`	request help
	6.1.7	`return_status`	return status (accept or reject)
	6.9.6	`help_info`	help information

5.2.9.5 UC 9.5 — Removing the linkage/cancelling the session

Table 45 provides a definition of UC 9.5 — Removing the linkage/cancelling the session.

Table 45 — Definition of UC 9.5 — Removing the linkage/cancelling the session

Use case	**Type of service**	Communities activities	An ND requests to remove link relationships with other ND when it connects to another ND.
	Cluster	9) Share location through the interaction interface between the personal stations	
	Name	UC 9.5 Removing the linkage/cancelling the session	
	Actor	P-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.9.7	`remove_linkage`	remove the linkage
	6.1.7	`return_status`	return status (success or failure)

5.2.10 Team travel

5.2.10.1 UC 10.1 — Requesting team information

Table 46 provides a definition of UC 10.1 — Requesting team information.

Table 46 — Definition of UC 10.1 — Requesting team information

Use case	**Type of service**	Communities activities	An ND user is authorized to read the information of the team he/she joined.
	Cluster	10) Team travel	
	Name	UC 10.1 Requesting team information	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.10.1	`join_team`	request join team
	6.1.7	`return_status`	return status (accept or reject)

5.2.10.2 UC 10.2 — Requesting to join a team

Table 47 provides a definition of UC 10.2 — Requesting to join a team.

Table 47 — Definition of UC 10.2 — Requesting to join a team

Use case	**Type of service**	Communities activities	An ND user requests to join a team in a location-based activity such as a long-distance trip to a scenic spot by car, bicycle or multimodal transport.
	Cluster	10) Team travel	
	Name	UC 10.2 Requesting to join a team	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.10.2	`request_team_info`	request team information
	6.10.3	`team_info`	team information

5.2.10.3 UC 10.3 — Requesting to track the lead vehicle

Table 48 provides a definition of UC 10.3 — Requesting to track the lead vehicle.

Table 48 — Definition of UC 10.3 — Requesting to track the lead vehicle

Use case	**Type of service**	Communities activities	An ND user tracks the leading vehicle instead of navigation in an activity.
	Cluster	10) Team travel	
	Name	UC 10.3 Requesting to track the lead vehicle	
	Actor	P-ITS-S,C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.10.4	`request_leading_vehicle`	request leading vehicle
	6.10.5	`leading_vehicle_trajectory`	leading vehicle track
	6.10.6	`member_location`	member location (Include POS_info and location name)

5.2.10.4 UC 10.4 — Close the tracking or quit the team

Table 49 provides a definition of UC 10.4 — Close the tracking or quit the team.

Table 49 — Definition of UC 10.4 — Close the tracking or quit the team

Use case	**Type of service**	Communities activities	When an ND user requests to close the tracking service, the system stops transmitting the other team member's location to the user. When the user quits the team, the system removes the user from the team member list and user's information can no longer be found by the other team members.
	Cluster	10) Team travel	
	Name	UC 10.4 Close the tracking or quit the team	
	Actor	P-ITS-S, C-ITS-S	
Message	**Subclause**	**Name**	**Description**
	6.10.7	`request_close_tracking`	request close tracking
	6.1.7	`return_status`	return status(tracking closed or quit)

6 Message set

6.1 Get positioning information by accessing a roadside station through the P-ITS-S and R-ITS-S interaction interface

6.1.1 available_positioning_service

Table 50 provides a definition of the message available_position_service.

Table 50 — Definition of available_position_service

Message	**Name**	`available_position_service`		
	Actor	P-ITS-S, R-ITS-S		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	`user_id`	`numeric[]`	user ID	Y
	`POS_info`	`structure`	position information	Y
	`-latitude`	`lnumeric[N]`	latitude	
	`-longitude`	`lnumeric[E]`	longitude	
	`-high`	`UTF8String`	high	
	`-speed`	`numeric[m/s]`	speed	
	`-timestamp`	`UTF8String`	timestamp	

Table 50 *(continued)*

DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }

ASN.1	position_service DXMessage::={ version, iTSmsID,
	dataParamValue{
	user_account:
	latitude:
	longitude:
	high:
	speed:
	timestamp:
	zone information:
	other:
	}
	}

6.1.2 position_service_list

Table 51 provides a definition of the message position_service_list.

Table 51 — Definition of position_service_list

Message	**Name**	position_service_list		
	Actor	P-ITS-S, R-ITS-S		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	position_service_list	Structure	position service list	Y
	-service_code	UTF8String	code of service	
	-service_name	UTF8String	name of service	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_service_list DXMessage::={ version, iTSmsID,
	dataParamValue{
	service_code:
	service_name:
	}
	}			

6.1.3 selected_position_service

Table 52 provides a definition of the message selected_position_service.

Table 52 — Definition of selected_position_service

Message	**Name**	selected_position_service		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	position_service_list	structure	position service list	Y
	-service_code	UTF8String	code of service	
	-service_name	UTF8String	name of service	

Table 52 *(continued)*

DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }

ASN.1	position_service DXMessage::={ version, iTSmsID,
	dataParamValue{
	service_code:
	service_name:
	}
	}

6.1.4 position_info_collection

Table 53 provides a definition of the message position_signal_collection.

Table 53 — Definition of position_signal_collection

Message	**Name**	position_info_collection		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	position_signal_info	structure	position signal information	Y
	-signal_id	lnumeric[N]	signal ID	
	-signal_strength	lnumeric[E]	strength of signal	
	-signal_location	UTF8String	location of signal	
	-other data	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_service DXMessage::={ version, iTSmsID,
	dataParamValue{
	signal_id:
	signal_strength:
	signal_location:
	other_data:
	}
	}			

6.1.5 position_service_CITS

Table 54 provides a definition of the message position_service_CITS.

Table 54 — Definition of position_service_CITS

Message	**Name**	position_service_CITS		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	UTF8String	user ID	Y
	position_service_list	structure	position service list	Y
	-service_code	UTF8String	code of service	
	-service_name	UTF8String	name of service	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 54 *(continued)*

ASN.1	position_service DXMessage::={ version, iTSmsID,
	dataParamValue{
	user_id;
	service_code:
	service_name:
	}
	}

6.1.6 current_position_info

Table 55 provides a definition of the message current_position_info.

Table 55 — Definition of current_position_info

Message	**Name**	current_position_info		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	POS_info	UTF8String	position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	zone information	UTF8String	information of zone	
	other location relative information	UTF8String	relative information of other location	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	latitude:
	longitude:
	high:
	speed:
	zone information:
	other:
	}
	}			

6.1.7 return_status

Table 56 provides a definition of the message return_status.

Table 56 — Definition of return_status

Message	**Name**	return_status		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	return_status	Boolean	Turn on or off position servic-es	Y

Table 56 *(continued)*

DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	return_status:
	}
	}

6.1.8 roadside_request

Table 57 provides a definition of the message roadside_request.

Table 57 — Definition of roadside_request

Message	**Name**	roadside_request		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user ID	Y
	roadside_type	UTF8String	roadside type	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.1.9 roadside_info_list

Table 58 provides a definition of the message roadside_info_list.

Table 58 — Definition of roadside_info_list

Message	**Name**	roadside_info		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	roadside_info	structure	roadside information	Y
	-temperature	numeric[]	temperature	
	-humidity	numeric[]	humidity	
	-wind speed	numeric[]	wind speed	
	-safe driving information	UTF8String	information of safe driving	
	-other information	UTF8String	other information	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 58 *(continued)*

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	temperature:
	humidity:
	wind speed:
	safe driving information:
	}
	}

6.2 Requesting to download and update local transport network data

6.2.1 local_transportnetwork

Table 59 provides a definition of the message local_transportnetwork.

Table 59 — Definition of local_transportnetwork

Message	**Name**	local_transportnetwork		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user ID	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	current_mapinfo	UTF8String	current map version information	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	Return_status:
	}
	}			

6.2.2 get_datapackage

Table 60 provides a definition of the message get_datapackage.

Table 60 — Definition of get_datapackage

Message	**Name**	get_datapackage		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	mapdata_info	Structure	map data information	Y
	-map_range	UTF8String	range of map	
	-map_version	UTF8String	current map version	
	-traffic_info	UTF8String	traffic information	
	road_info	structure	road name and road type	
	-road_type	UTF8String	road type	
	-road_name	UTF8String	name of road	
	POI	Structure	information of POI	
	-POI_type	UTF8String	type of POI	
	-POI_name	UTF8String	name of POI	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	facility_info	structure	public facilities information in commercial area or scenic spots	
	-facility_type	UTF8String	type of facility	
	-facility_name	UTF8String	name of facility	
	commercial_info	Structure	commercial area information	Y
	-name	UTF8String	name of commercial	
	-sub_name	UTF8String	subname of commercial	
	-good_info	Structure	goods information	
	-good_type	UTF8String	type of goods	
	-good_name	UTF8String	name of goods	
	scenic_info	Structure	Scenic spots information including name and text or image description	Y
	-name	UTF8String	name of scenic spot	
	-text_description	UTF8String	description of the spot	
	-video_info	UTF8String	video information of spot	
	-videos		videos of spot	
	-pictures		pictures of spot	
	indoor_info	Structure	indoor information	
	-type	UTF8String	type of indoor information	
	-name		name of indoor information	
	-otherdata		other data of indoor information	
	other_ text&multimedia_ info	UTF8String	other text and multimedia of indoor information	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.2.3 slowtransport_navi

Table 61 provides a definition of the message slowtransport_navi.

Table 61 — slowtransport_navi

Message	Name	slowtransport_navi		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user id	Y
	user_POS_info	structure	user position information	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	destination_info	structure	destination information	
	-destination_name	UTF8String	name of destination	
	-destination_POS_info	structure	position information of destination	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	-otherdata	UTF8String	otherdata	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.2.4 optimal_slowtransport_navi_path

Table 62 provides a definition of the message optimal_slowtransport_path.

Table 62 — Definition of optimal_slowtransport_path

Message	Name	optimal_slowtransport_path		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	slowtransport_path	structure	slow transportation path	Y
	-distance	UTF8String	distance	
	-start_name	UTF8String	name of start	
	-destination_name	UTF8String	name of destination	
	road_path	stucture	road path	
	-road_name	UTF8String	name of road	
	-road_type	UTF8String	type of road	
	-road_distance	UTF8String	road distance	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 62 *(continued)*

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}

6.2.5 search_surrounding_facilities

Table 63 provides a definition of the message search_surrounding_facilities.

Table 63 — Definition of search_surrounding_facilities

Message	**Name**	search_surrounding_facilities		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user id	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	facility_request	structure	facility request	
	-facility_type	UTF8String	type of facility	
	-facility_key	numeric[]	key of facility	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.2.6 surrounding_facilities

Table 64 provides a definition of the message surrounding_facilities.

Table 64 — Definition of surrounding_facilities

Message	**Name**	surrounding_facilities

Table 64 *(continued)*

DataParameter	Name	DataType[Unit]	Description	Mandatory
	facility_info	structure	facility information	Y
	-facility_id	numeric[]	facility ID	
	-facility_type	UTF8String	type of facility	
	-facility_name	UTF8String	name of facility	
	-facility_description	UTF8String	description of facility	
	-facility_POS_info	structure	information of facility position	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.2.7 search_surrounding_commercial

Table 65 provides a definition of the message search_surrounding_commercial.

Table 65 — Definition of search_surrounding_commercial

Message	Name	search_surrounding_commercial		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user id	Y
	POS_info	structure	position information	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	commercial_request	structure	commercial request	
	-commercial_type	UTF8String	type of commercial	
	user_preferences	array[]	user preferences	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.2.8 surrounding_commercial_info

Table 66 provides a definition of the message surrounding_commercial_info.

Table 66 — Definition of surrounding_commercial_info

Message	Name	surrounding_commercial_info		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	commercial_info	structure	commercial information	Y
	-commercial_name	UTF8String	name of commercial area	
	-participants	UTF8String	participants	
	-contents	UTF8String	contents	
	-limited_conditions	UTF8String	limited conditions	
	-open_hour	UTF8String	open hour	
	-close_hour	UTF8String	close hour	
	-other_info	UTF8String	other information	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.3 Requesting the safety evacuation passageway or emergency service

6.3.1 safety_evacuation_passageway

Table 67 provides a definition of the message safety_evacuation_passageway.

Table 67 — Definition of safety_evacuation_passageway

Message	Name	safety_evacuation_passageway		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user id	Y
	user_POS_info	structure	user position information	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	destination_info	structure	destination information	
	-destination_name	UTF8String	name of destination	
	-otherdata	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.3.2 optimal_navigation_path

Table 68 provides a definition of the message optimal_navigation_path.

Table 68 — Definition of optimal_navigation_path

Message	Name	optimal_navigation_path		
DataParam-eter	Name	DataType[Unit]	Description	Mandatory
	shelter_POS_info	structure	shelter position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	user_POS_info	structure	user position information	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	optimal_safe_path	structure	optimal safe pash	
	-distance	UTF8String	distance	
	-start_name	UTF8String	name of start	
	-shelter_name	UTF8String	pre-defined shelter	
	-description	UTF8String	description	
	road_path	structure	road path	
	-road_name	UTF8String	name of road	
	-road_type	UTF8String	type of road	
	-road_distance	UTF8String	distance of road	
	-turn_name	array[]	name of turn	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.3.3 emergency_info

Table 69 provides a definition of the message emergency_info.

Table 69 — Definition of emergency_info

Message	Name	emergency_info		
DataParam-eter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user id	Y
	emergency_info	structure	emergency information	Y
	-emergency_type	UTF8String	emergency type	
	-emergency_content	UTF8String	emergency content	
	sending_object	UTF8String	sending object	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 69 *(continued)*

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}

6.3.4 sending_status

Table 70 provides a definition of the message sending_status.

Table 70 — Definition of sending_status

Message	**Name**	sending_status		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	sending_status	Boolean	send status	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.3.5 request_rescue_info

Table 71 provides a definition of the message request_rescue_info.

Table 71 — Definition of request_rescue_info

Message	**Name**	request_rescue_info		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	UTF8String	user id	Y
	POS_info	structure	position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	sending_object	UTF8String	sending object	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.3.6 Rescue_info

Table 72 provides a definition of the message rescue_info.

Table 72 — Definition of rescue_info

Message	**Name**	rescue_info

Table 72 *(continued)*

DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	UTF8String	user id	Y
	rescue_info	structure	rescue information	Y
	-rescue_type	UTF8String	rescue type	
	-rescue_content	UTF8String	rescue content	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.3.7 emergency_status

Table 73 provides a definition of the message emergency_status.

Table 73 — Definition of emergency_status

Message	Name	emergency_status		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	UTF8String	user ID	
	emergency_status	UTF8String	emergency status	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4 Transfer information service in the parking lot

6.4.1 request_surrounding_parking

Table 74 provides a definition of the message request_surrounding_parking.

Table 74 — Definition of request_surrounding_parking

Message	Name	request_surrounding_parking		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	UTF8String	user ID	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	destination_info	structure	destination information	Y
	-destination_name	UTF8String	name of destination	
	-description	UTF8String	description	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 74 *(continued)*

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}

6.4.2 surrounding_parking_info

Table 75 provides a definition of the message surrounding_parking_info.

Table 75 — Definition of surrounding_parking_info

Message	**Name**	Surrounding_parking_info		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	parking_info	structure	parking information	Y
	-parking_name	UTF8String	parking name	
	-parking_position	UTF8String	parking position	
	-total_spaces	UTF8String	total parking spaces	
	-empty_spaces	numeric[]	empty parking spaces	
	-distanceTodestination	UTF8String	distance to destination	
	-other_data	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamlist{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.3 get_surrounding_traffic

Table 76 provides a definition of the message get_surrounding_traffic.

Table 76 — Definition of get_surrounding_traffic

Message	**Name**	get_surrounding_traffic		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user ID	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.4 surrounding_realtime_map

Table 77 provides a definition of the message surrounding_realtime_map.

Table 77 — Definition of surrounding_realtime_map

Message	Name	surrounding_realtime_map		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user ID	Y
	traffic_map	structure	traffic information shows on map	Y
	-road_id	UTF8String	road ID	
	-road_name	UTF8String	name of road	
	traffic_info	structure	traffic information	
	-traffic_state	UTF8String	traffic state (heavy, general, flow)	
	-traffic_location	UTF8String	traffic location	
	-otherdata	UTF8String	other data	
	current_speed	numeric[]	current speed	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamlist{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.5 surrounding_realtime_traffic_info

Table 78 provides a definition of the message surrounding_realtime_traffic_info.

Table 78 — Definition of surrounding_realtime_traffic_info

Message	Name	surrounding_realtime_traffic_info		
	Name	**DataType[Unit]**	**Description**	**Mandatory**
	traffic_info	structure	traffic information description content	Y
	-traffic_state	UTF8String	traffic state (heavy, general, flow)	Y
	-traffic_location	UTF8String	traffic location	UTF8String
	-otherdata	UTF8String	other data	
	current_speed	numeric[]	current speed	
	road_description	UTF8String	road description	
	-road_id	UTF8String	road ID	
	-road_name	UTF8String	name of road	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.6 request_parking_facility

Table 79 provides a definition of the message request_parking_facility.

Table 79 — Definition of request_parking_facility

Message	Name	request_parking_facility		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	request_parking_facility	structure	parking facility	Y
	-facility_type	UTF8String	facility type	
	-facility_key	UTF8String	facility key	
	user_POS_info	structure	user position information	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ }}			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.7 surrounding_facility_info

Table 80 provides a definition of the message surrounding_facility_info.

Table 80 — Definition of surrounding_facility_info

Message	Name	surrounding_facility_info		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	parking_facility_info	structure	parking facility information	Y
	-parking_id	UTF8String	parking ID	
	-facility_type	UTF8String	facility type	
	-facility_name	UTF8String	facility name	
	-facility_brief	UTF8String	brief information of facility	
	-otherdata	UTF8String	other data	
	facility_POS_info	structure	facility position information	
	-latitude	lnumeric[N]	latitude	Y
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 80 *(continued)*

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}

6.4.8 parkinglot_indoor_navigation

Table 81 provides a definition of the message parkinglot_indoor_navigation.

Table 81 — Definition of parkinglot_indoor_navigation

Message	**Name**	parkinglot_indoor_navigation		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user ID	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	destination_info	structure	destination information	
	-destination_name	UTF8String	name of destination	
	-description	UTF8String	description	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.9 optimal_parkinglot_path

Table 82 provides a definition of the message optimal_parkinglot_path.

Table 82 — Definition of optimal_parkinglot_path

Message	**Name**	optimal_parkinglot_path		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	road_info	structure	road information	Y
	-road_distance	UTF8String	road distance	Y
	-road_name	UTF8String	name of road	
	-road_type	UTF8String	type of road	
	-road_position	UTF8String	position of road	
	-otherdata	UTF8String	other data	
	path_description	structure	path description	
	-total_distance	UTF8String	total distance	
	-start_name	UTF8String	name of start	
	-destination_name	UTF8String	name of destination	

Table 82 *(continued)*

DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}

6.4.10 Request_car_POS

Table 83 provides a definition of the message request_car_POS.

Table 83 — Definition of request_car_POS

Message	**Name**	Parkinglot_car_POS		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user id	Y
	vehicle_id	UTF8String	vehicle id	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.11 parkinglot_car_POS

Table 84 provides a definition of the message parkinglot_car_POS.

Table 84 — Definition of parkinglot_car_POS

Message	**Name**	Parkinglot_car_POS		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	vehicle_POS_info	structure	vehicle position information	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	-zone_info	UTF8String	information of zone	
	-otherdata	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.12 car_POS_info

Table 85 provides a definition of the message car_POS_info.

Table 85 — Definition of car_POS_info

Message	Name	car_POS_info		
DataParam-eter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	vehicle_POS_info	structure	vehicle position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	-otherdata	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.13 request_pedestrian_path

Table 86 provides a definition of the message request_pedestrian_path.

Table 86 — Definition of request_pedestrian_path

Message	Name	request_pedestrian_path		
DataParam-eter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	vehicle_id	numeric[]	vehicle id	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	vehicle_POS_info	structure	vehicle position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	-otherdata	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.4.14 optimal_ pedestrian_path

Table 87 provides a definition of the message optimal_pedestrian_path.

Table 87 — Definition of optimal_pedestrian_path

Message	Name	optimal_pedestrian_path		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	vehicle_POS_info	structure	vehicle position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	-otherdata	UTF8String	other data	
	path_description	structure	path description	Y
	-distance	UTF8String	distance	
	-start_name	UTF8String	name of start	
	-destination_name	UTF8String	name of destination	
	road_attributes	structure	road attributes	Y
	-distance	UTF8String	distance	
	-road_name	UTF8String	name of road	
	-road_type	UTF8String	road type	
	-road_position	UTF8String	position of road	
	-otherdata	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}			

6.5 Requesting the transfer information service in an integrated transportation hub

6.5.1 public_transport_timetable

Table 88 provides a definition of the message public_transport_timetable.

Table 88 — Definition of public_transport_timetable

Message	Name	public_transport_timetable

Table 88 *(continued)*

DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	public_transport_info	structure	public transport information	Y
	-public_transport_code	numeric[]	code of public transport	
	-public_transport_type	UTF8String	type of public transport	
	-business_hour	UTF8String	business hour	
	-arrival_departure_time	array[]	arrival/departure time	
	search_public_transport	numeric[]	search public transport	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.5.2 public_transport_time

Table 89 provides a definition of the message public_transport_time.

Table 89 — Definition of public_transport_time

Message	Name	public_transport_time		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	public_transport_info	structure	public transport information	Y
	-public_transport_code	numeric[]	code of public transport	
	-public_transport_type	UTF8String	type of public transport	
	-business_hour	UTF8String	business hour	
	-arrival_departure_time	array[]	arrival/departure time	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.5.3 request_public_transport

Table 90 provides a definition of the message request_public_transport.

Table 90 — Definition of request_pubic_transport

Message	Name	request_public_tranport		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y

Table 90 *(continued)*

	public_ITH_name	UTF8String	name of the hub or station or terminal	Y
	public_transport_code	UTF8String	code of public transport	
	public_transport_info	structure	public transport information	Y
	-public_transport_code	numeric[]	code of public transport	
	-public_transport_type	UTF8String	type of public transport	
	-business_hour	UTF8String	business hour	
	-arrival_departure_time	array[]	arrival/departure time	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.5.4 public_transport_location

Table 91 provides a definition of the message public_transport_location.

Table 91 — Definition of public_transport_location

Message	**Name**	public_tranport_location		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	public_transport_location	UTF8String	public transport location	Y
	-status	UTF8String	arrival or departure	
	-gate_number	UTF8String	flight arriving/boarding gate	
	-platform_number	UTF8String	arriving/departure platform	
	-bus_stop	UTF8String	bus stops	
	-taxi_stop	UTF8String	taxi waiting area	
	-ferry_terminal	UTF8String	ferry terminal	
	-otherdata	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.5.5 request_transfer_info

Table 92 provides a definition of the message request_transfer_info.

Table 92 — Definition of request_transfer_info

Message	**Name**	request_transfer_info

Table 92 *(continued)*

DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	transfer_info	structure	transfer information	Y
	-start_name	UTF8String	transfer station name	
	-end_name	UTF8String	transfer station name	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.5.6 optimal_transfer_path

Table 93 provides a definition of the message optimal_transfer_path.

Table 93 — Definition of optimal_transfer_path

Message	Name	optimal_transfer_path		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	path_description	structure	path description	Y
	-total_distance	UTF8String	total distance	
	-start_name	UTF8String	name of start	
	-destination_name	UTF8String	name of destination	
	road_attributes	structure	road attributes	Y
	-distance	UTF8String	distance	
	-road_name	UTF8String	name of road	
	-road_type	UTF8String	type of road	
	-road_position	UTF8String	position of road	
	-otherdata	UTF8String	other data	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.5.7 request_express_channel

Table 94 provides a definition of the message request_express_channel.

Table 94 — Definition of request_express_channel

Message	Name	request_express_channel

Table 94 *(continued)*

DataParam-eter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	public_transport_info	structure	public transport information	Y
	-public_transport_code	numeric[]	code of public transport	
	-public_transport_type	UTF8String	type of transport	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.5.8 optimal_security _path

Table 95 provides a definition of the message optimal_security_path.

Table 95 — Definition of optimal_security_path

Message	Name	optimal_security_path		
DataParam-eter	Name	DataType[Unit]	Description	Mandatory
	path_description	structure	path description	
	-total_distance	UTF8String	total distance	
	-start_name	UTF8String	name of start	
	-destination_name	UTF8String	name of destination	
	road_attributes	structure	road attributes	
	-distance	UTF8String	distance	Y
	-road_name	UTF8String	name of road	
	-road_type	UTF8String	type of road	
	-road_position	UTF8String	position of road	
	-otherdata	UTF8String	other data	
	station_info	structure	station information	Y
	-station_name	UTF8String	station name	
	-line_name	UTF8String	name of bus lines	
	-POS_info	structure	position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.6 Traffic and public transport information service via P2C or P2R interaction interface

6.6.1 request_public_transport

Table 96 provides a definition of the message request_public_transport

Table 96 — Definition of request_public_transport

Message	Name	request_public_tranport		
DataParam-eter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	navigation_info	structure	navigation information	Y
	-departure_name	UTF8String	name of departure	
	-arrival_name	UTF8String	name of arrival	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.6.2 optimal_public_transport_path

Table 97 provides a definition of the message optimal_public_transport_path.

Table 97 — Definition of optimal_public_transport_path

Message	Name	optimal_public_transport_path		
DataParam-eter	Name	DataType[Unit]	Description	Mandatory
	path_description	structure	path description	Y
	-distance	UTF8String	distance	Y
	-start_name	UTF8String	name of start	
	-destination_name	UTF8String	name of destination	
	road_attributes	structure	road attributes	
	-road_name	UTF8String	name of road	
	-road_type	UTF8String	type of road	
	-road_position	UTF8String	position of road	
	-otherdata	UTF8String	other data	
	station_info	structure	station information	
	-station_name	UTF8String	name of station	
	-line_name	UTF8String	name of bus lines	
	-POS_info	structure	position information	
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 97 *(continued)*

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}

6.6.3 request_traffic_info

Table 98 provides a definition of the message request_traffic_info.

Table 98 — Definition of request_traffic_info

Message	**Name**	request_traffic_info		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user ID	Y
	road_name	UTF8String	road name	Y
	planed_route	array[]	planed route	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.6.4 road_traffic_info

Table 99 provides a definition of the message road_traffic_info.

Table 99 — Definition of road_traffic_info

Message	**Name**	road_traffic_info		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	traffic_info	structure	traffic information	Y
	-traffic_type	UTF8String	type of traffic	
	-traffic_name	UTF8String	name of traffic	
	-travel_time	UTF8String	estimate travel time	
	-travel_direction	UTF8String	travel direction	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.6.5 request_public_transport_info

Table 100 provides a definition of the message request_public_transport_info.

Table 100 — Definition of request_public_transport_info

Message	**Name**	request_public_transport_info

Table 100 *(continued)*

DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	station_name	UTF8String	station name	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.6.6 public_transport_vehicle_status

Table 101 provides a definition of the message public_transport_vehicle_status.

Table 101 — Definition of public_transport_vehicle_status

Message	Name	public_transport_vehicle_status		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	public_vehicle_info	structure	public vehicle information	Y
	-line_type	UTF8String	type of public transport lines (for instance, bus, subway)	
	-line_name	UTF8String	name of lines	
	arrival_time	UTF8String	estimate arrival time	Y
	travel_direction	UTF8String	travel direction	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.6.7 request_realtime_transfer_info

Table 102 provides a definition of the message request_realtime_transfer_info.

Table 102 — Definition of request_realtime_transfer_info

Message	Name	request_realtime_transfer_info		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 102 *(continued)*

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}

6.6.8 surrounding_realtime_transfer_map

Table 103 provides a definition of the message surrounding_realtime_transfer_map.

Table 103 — Definition of surrounding_realtime_transfer_map

Message	**Name**	surrounding_realtime_transfer_map		
DataParameter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user ID	Y
	transfer_map_info	structure	transfer map information	Y
	-map_range	UTF8String	map range	
	-current_POS	UTF8String	current position	
	-current_time	UTF8String	current time	
	people_flow_level	UTF8String	three levels of flow	Y
	traffic_info	structure	traffic information	Y
	-traffic_type	UTF8String	type of traffic	
	-traffic_name	UTF8String	name of traffic	
	-travel_time	UTF8String	estimate travel time	
	-travel_direction	UTF8String	travel direction	
	otherdata	UTF8String	other data	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.6.9 surrounding_realtime_transfer_info

Table 104 provides a definition of the message surrounding_realtime_transfer_info.

Table 104 — Definition of surrounding_realtime_transfer_info

Message	**Name**	surrounding_realtime_transfer_info

Table 104 *(continued)*

DataParameter	Name	DataType[Unit]	Description	Mandatory
	transfer_info	structure	transfer information	Y
	-transfer_name	UTF8String	transfer station name	
	-current_POS	UTF8String	current position	
	-current_time	UTF8String	current time	
	people_flow_level	UTF8String	three levels of flow	Y
	traffic_info	structure	traffic information	Y
	-traffic_type	UTF8String	type of traffic	
	-traffic_name	UTF8String	name of traffic	
	-travel_time	UTF8String	estimate travel time	
	-travel_direction	UTF8String	travel direction	
	otherdata	UTF8String	other data	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.7 Trip planning for travellers with a personal ITS station

6.7.1 search_POI

Table 105 provides a definition of the message search_POI.

Table 105 — Definition of search_POI

Message	Name	search_POI		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	search_area	UTF8String	search area	Y
	POI_type	UTF8String	POI (Point Of Interest) type	Y
	user_POS_info	structure	user position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.7.2 POI_info

Table 106 provides a definition of the message POI_info.

Table 106 — Definition of POI_info

Message	Name	POI_info		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	POI_info	structure	POI (point of interest) information	Y
	-POI_id	UTF8String	POI ID	
	-POI_type	UTF8String	type of POI	
	-POI_name	UTF8String	name of POI	
	-POI_description	UTF8String	description of POI	
	POS_info	structure	position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.7.3 planning_route

Table 107 provides a definition of the message planning_route.

Table 107 — Definition of planning_route

Message	Name	planning_route		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	user ID	Y
	planning_route_info	structure	planning route	Y
	-start_name	UTF8String	name of start	
	-destination_name	UTF8String	name of destination	
	-way_points	array[]	waypoint	
	POS_info	structure	position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	sending_object	UTF8String	sending object	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.7.4 planningroute_return_status

Table 108 provides a definition of the message planningroute_return_status.

Table 108 — Definition of planningroute_return_status

Message	Name	planningroute_return_status		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	return_status	Boolean	return status (true/false)	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.7.5 request_route_info

Table 109 provides a definition of the message request_route_info.

Table 109 — Definition of request_route_info

Message	Name	request_route_info		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	user_id	numeric[]	use id	Y
	route_info	structure	route information	Y
	-start_name	UTF8String	name of start	
	-destination_name	UTF8String	name of destination	
	-way_points	array[]	waypoint	
	-traffic_info	array[]	traffic information	
	-environmental_info	array[]	environmental information	
	requesting_info	structure	requesting information	Y
	-requesting_object	UTF8String	requesting object	
	-requesting_status	UTF8String	requesting status	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.7.6 route_return_status

Table 110 provides a definition of the message route_return_status.

Table 110 — Definition of route_return_status

Message	Name	route_return_status		
DataParameter	Name	DataType[Unit]	Description	Mandatory
	return_status	Boolean	return status (true/false)	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

Table 110 *(continued)*

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}

6.7.7 request_modify_trip

Table 111 provides a definition of the message request_modify_trip.

Table 111 — Definition of request_modify_trip

Message	**Name**	request_modify_trip		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	user_id	numeric[]	user ID	Y
	change_info	structure	change information	Y
	-current_name	UTF8String	current name	
	-destination_name	UTF8String	name of destination	
	-way_points	array[]	waypoint	
	POS_info	structure	position information	Y
	-latitude	lnumeric[N]	latitude	
	-longitude	lnumeric[E]	longitude	
	-high	UTF8String	high	
	-speed	numeric[m/s]	speed	
	-timestamp	UTF8String	timestamp	
	request_info	structure	request information	
	-requesting_object	UTF8String	requesting object	
	-requesting_status	UTF8String	requesting status	
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			

6.7.8 modifytrip_return_status

Table 112 provides a definition of the message modifytrip_return_status.

Table 112 — Definition of modifytrip_return_status

Message	**Name**	modifytrip_return_status		
DataParam-eter	**Name**	**DataType[Unit]**	**Description**	**Mandatory**
	return_status	Boolean	return status (true/false)	Y
DXMConfig	Msg{iTSmsID, name,type,executer,dataparamList{ } }			

ASN.1	position_info DXMessage::={ version, iTSmsID,
	dataParamValue{
	}
	}			