

# DIN CEN/TS 17118:2025-02 (E)

Intelligent transport systems - Public transport - Open API for distributed journey planning; English version CEN/TS 17118:2024

---

<b>Contents</b>		<b>Page</b>
European foreword.....		12
<b>0</b>	<b>Introduction.....</b>	<b>13</b>
<b>0.1</b>	<b>General.....</b>	<b>13</b>
<b>0.2</b>	<b>An Open API for distributed journey planning (OJP).....</b>	<b>13</b>
<b>0.3</b>	<b>The public transport information tensions.....</b>	<b>13</b>
<b>0.4</b>	<b>Distributed journey planning architecture beyond scope.....</b>	<b>14</b>
<b>0.4.1</b>	<b>General.....</b>	<b>14</b>
<b>0.4.2</b>	<b>The distributed journey planning approach.....</b>	<b>14</b>
<b>0.4.3</b>	<b>Distributed or centralised approaches.....</b>	<b>15</b>
<b>0.4.4</b>	<b>The basis for the Open API.....</b>	<b>15</b>
<b>0.4.5</b>	<b>Other possible uses for the Open API.....</b>	<b>16</b>
<b>0.5</b>	<b>The European ITS Directive.....</b>	<b>16</b>
<b>1</b>	<b>Scope.....</b>	<b>17</b>
<b>2</b>	<b>Normative references.....</b>	<b>17</b>
<b>3</b>	<b>Terms and definitions.....</b>	<b>17</b>
<b>3.1</b>	<b>Terms used in OJP schema.....</b>	<b>17</b>
<b>3.2</b>	<b>Terms in OJP Schema.....</b>	<b>33</b>
<b>4</b>	<b>Symbols and abbreviations.....</b>	<b>34</b>
<b>5</b>	<b>Use cases.....</b>	<b>35</b>
<b>5.1</b>	<b>General.....</b>	<b>35</b>
<b>5.2</b>	<b>Key tasks for Distributed Journey Planning.....</b>	<b>37</b>
<b>5.2.1</b>	<b>Planning of a trip.....</b>	<b>37</b>
<b>5.2.2</b>	<b>Discovering relevant stops.....</b>	<b>38</b>
<b>5.2.3</b>	<b>Obtaining information about accessibility and services for those with special needs.....</b>	<b>38</b>
<b>5.2.4</b>	<b>Seeking route information that can be displayed on maps.....</b>	<b>38</b>
<b>5.2.5</b>	<b>Refine a trip.....</b>	<b>38</b>
<b>5.2.6</b>	<b>Changing a Trip.....</b>	<b>39</b>
<b>5.3</b>	<b>Additional tasks for a Distributed Journey Planning system.....</b>	<b>39</b>
<b>5.3.1</b>	<b>Requesting a stop timetable.....</b>	<b>39</b>
<b>5.3.2</b>	<b>Requesting times and other information for all intermediate stops in a trip.....</b>	<b>40</b>
<b>5.3.3</b>	<b>Requesting expected events at a particular stop.....</b>	<b>40</b>
<b>5.3.4</b>	<b>Requesting information about a given journey or vehicle.....</b>	<b>40</b>
<b>5.3.5</b>	<b>Requesting information about the fares and ticket options for a particular trip.....</b>	<b>40</b>
<b>5.3.6</b>	<b>Requesting information about lines.....</b>	<b>40</b>
<b>5.3.7</b>	<b>Requesting information about availability of journeys/vehicles.....</b>	<b>40</b>
<b>5.3.8</b>	<b>Other possible questions.....</b>	<b>41</b>
<b>5.4</b>	<b>Advanced concepts/considerations.....</b>	<b>41</b>
<b>5.4.1</b>	<b>Routing for passengers with special needs.....</b>	<b>41</b>
<b>5.4.2</b>	<b>Via, fixed legs.....</b>	<b>42</b>
<b>5.4.3</b>	<b>User preferences.....</b>	<b>43</b>
<b>5.4.3.1</b>	<b>Definition.....</b>	<b>43</b>
<b>5.4.3.2</b>	<b>Usage.....</b>	<b>43</b>
<b>5.4.3.3</b>	<b>Good user preferences.....</b>	<b>43</b>
<b>5.4.3.4</b>	<b>Mechanism.....</b>	<b>44</b>
<b>5.4.3.5</b>	<b>Suggested user preferences.....</b>	<b>44</b>

5.4.4	IncludeAlternativeOptions in trips .....	47
5.4.5	Handling of slow traffic .....	47
5.4.6	Demand responsive transport.....	48
5.4.6.1	Relevant mode .....	49
5.4.6.2	Handling demand responsive buses in the stop event service .....	49
5.4.7	Formations, Occupancy and Capacity.....	50
5.4.8	International ServiceJourney (mainly trains).....	51
5.4.9	Interaction OJP with fare calculating systems and reservation systems .....	52
6	System architectures, metadata and data.....	52
6.1	General .....	52
6.2	General considerations - distributed planning.....	52
6.3	Modular interface construction.....	54
6.4	General considerations - pipelines.....	55
6.5	Responsibility of a Distributing System to find gaps/overlaps in the results and to correct them .....	55
6.6	Metadata requirements.....	55
6.7	Core data requirements .....	56
6.7.1	Locations.....	56
6.7.2	Topographic map.....	57
6.7.3	Timetables.....	57
6.7.4	Fares and booking information .....	57
6.7.5	Other modes .....	57
7	Open API for distributed journey planning - OJP services.....	58
7.1	Identification of objects beyond system borders.....	58
7.1.1	General .....	58
7.1.2	Stops and Stopping Points .....	58
7.1.3	Localities and Districts .....	59
7.1.4	Addresses and POIs.....	59
7.1.5	Organisations: transport companies and transport authorities.....	59
7.1.6	Lines and line directions.....	60
7.1.7	Journeys .....	61
7.1.8	Vehicles .....	61
7.1.9	Operating days.....	61
7.1.10	Owners.....	61
7.1.11	Stop and vehicle equipment.....	62
7.1.12	Participating systems or IT systems.....	62
7.1.13	Incident messages .....	62
7.1.14	Fare authority .....	62
7.1.15	Tariff zones .....	62
7.1.16	Tickets and traveller cards .....	62
7.2	Trip service .....	63
7.2.1	Purpose .....	63
7.2.2	Interactions.....	64
7.2.3	Concerned components.....	65
7.2.4	Function 1: trip planning .....	65
7.2.5	Function 2: multipoint trip planning.....	65
7.2.6	Function 3: distributed trip planning.....	67
7.2.7	Function 4: find earlier or later trips .....	67
7.3	Departure/arrival monitor .....	67
7.3.1	Purpose .....	67
7.3.2	Interactions.....	67
7.3.3	Concerned components.....	68

7.3.4	Function 5: departure/arrival monitor .....	68
7.4	Fare information .....	68
7.4.1	Purpose.....	68
7.4.2	Interactions .....	68
7.4.3	Concerned Components.....	69
7.4.4	Function 6: tariff zones for stop or station .....	69
7.4.5	Function 7: static fare information.....	69
7.4.6	Function 8: trip-related fare information .....	70
7.5	Location text matching.....	70
7.5.1	Purpose.....	70
7.5.2	Interactions .....	70
7.5.3	Concerned Components.....	70
7.5.4	Function 9: Location text matching .....	70
7.6	Object information service .....	71
7.6.1	Purpose.....	71
7.6.2	Interactions .....	71
7.6.3	Concerned components .....	71
7.6.4	Function 10: Object Information .....	71
7.6.5	Function 11: finding relevant exchange points.....	71
7.7	Trip Information Service.....	72
7.7.1	Purpose.....	72
7.7.2	Interactions .....	72
7.7.3	Concerned components .....	72
7.7.4	Function 12: trip information service .....	72
7.8	Availability service .....	73
7.8.1	Purpose.....	73
7.8.2	Interactions.....	73
7.8.3	Concerned Components.....	73
7.8.4	Function 13: availability service.....	74
7.9	Refinement service .....	74
7.9.1	Purpose.....	74
7.9.2	Interactions .....	75
7.9.3	Concerned Components.....	75
7.9.4	Function 14: trip refinement service .....	75
7.10	Trip changing service .....	76
7.10.1	Purpose.....	76
7.10.2	Interactions .....	76
7.10.3	Concerned Components.....	76
7.10.4	Function 15: trip changing service .....	76
7.11	Line information service .....	77
7.11.1	Purpose.....	77
7.11.2	Interactions .....	77
7.11.3	Concerned components .....	77
7.11.4	Function 16: line information service .....	77
7.12	Status service.....	78
7.12.1	Purpose.....	78
7.12.2	Interactions .....	78
7.12.3	Concerned components .....	78
7.12.4	Function 17: status service.....	78
7.13	When to use which service.....	79
8	Open API for distributed journey planning - interface description.....	80
8.1	Notation of XML elements and XML structures.....	80

8.1.1	General .....	80
8.1.2	Display of XML elements in the text.....	81
8.1.3	Display of Relationships.....	81
8.1.4	Table notation of XML structures .....	81
8.1.4.1	General .....	81
8.1.4.2	Grouping .....	85
8.1.4.3	Element name .....	85
8.1.4.4	Multiplicity & choice (min:max).....	85
8.1.4.5	Data type .....	85
8.1.4.6	Explanation .....	86
8.1.5	Message exchange .....	86
8.1.6	Use of SIRI procedure.....	86
8.1.7	HTTP and REST.....	87
8.1.8	Roles of server and client .....	88
8.2	Services and XML schemas .....	88
8.2.1	General .....	88
8.2.2	Services provided .....	88
8.2.3	Service sequences.....	89
8.2.4	Imported schemas.....	90
8.2.5	Problems and error states when operating OJP services.....	90
8.2.6	Error codes from SIRI.....	91
8.2.7	OJP <i>ErrorCondition</i> .....	92
8.2.8	General OJP problems.....	92
8.2.9	Time zones .....	92
8.3	Common XML structures.....	93
8.3.1	General .....	93
8.3.2	Root element OJP .....	93
8.3.2.1	General .....	93
8.3.2.2	OJPRequestStructure.....	94
8.3.2.3	OJPResponseStructure.....	95
8.3.2.4	ServiceRequestStructure and ServiceRequestContext (from SIRI).....	96
8.3.2.5	ServiceDeliveryStructure (from SIRI).....	100
8.3.3	OJP_UTILITY.....	101
8.3.3.1	General .....	101
8.3.3.2	Simple types.....	101
8.3.3.3	InternationalTextStructure .....	101
8.3.3.4	WebLinkStructure .....	102
8.3.4	OJP_ModesSupport .....	102
8.3.4.1	General .....	102
8.3.4.2	Simple types.....	102
8.3.4.3	IndividualTransportOptionStructure .....	107
8.3.4.4	ItModesStructure.....	108
8.3.4.5	ModeStructure .....	108
8.3.4.6	ModeAndModeOfOperationFilterStructure .....	109
8.3.4.7	ModeFilterStructure .....	110
8.3.5	OJP_Common .....	111
8.3.5.1	Simple types.....	111
8.3.5.2	OJPError .....	111
8.3.5.3	OJPErrorStructure.....	112
8.3.5.4	ErrorType .....	112
8.3.5.5	PrivateCodeStructure.....	112
8.3.5.6	LinearShapeStructure .....	112
8.3.5.7	AreaStructure.....	112

8.3.5.8	OperatorRef.....	112
8.3.5.9	OperatorRefs_RelStructure .....	112
8.3.5.10	OperatorFilterStructure.....	113
8.3.5.11	ProductCategoryRef.....	113
8.3.5.12	siri:LineDirectionStructure.....	113
8.3.5.13	LineDirectionFilterStructure.....	113
8.3.5.14	JourneyRefStructure.....	113
8.3.5.15	JourneyRef.....	113
8.3.5.16	VehicleFilterStructure .....	114
8.3.5.17	AlternativeServiceStructure .....	114
8.3.5.18	OwnerRefStructure .....	114
8.3.5.19	OwnerRef .....	114
8.3.5.20	OperatingDayRefStructure.....	114
8.3.5.21	OperatingDayRef.....	114
8.3.5.22	OperatingDaysStructure .....	115
8.3.5.23	WeekdayTimePeriodStructure.....	115
8.3.5.24	GeneralAttributeStructure .....	115
8.3.5.25	EmissionCO2Structure.....	115
8.3.6	OJP_PlaceSupport.....	116
8.3.6.1	General.....	116
8.3.6.2	Simple types.....	116
8.3.6.3	StopPointStructure.....	117
8.3.6.4	StopPlaceRefStructure .....	117
8.3.6.5	StopPlaceRef .....	117
8.3.6.6	StopPlaceStructure.....	117
8.3.6.7	TopographicPlaceRefStructure.....	118
8.3.6.8	TopographicPlaceRef.....	118
8.3.6.9	TopographicPlaceStructure .....	118
8.3.6.10	PointOfInterestRefStructure .....	118
8.3.6.11	PointOfInterestRef .....	118
8.3.6.12	PointOfInterestStructure .....	119
8.3.6.13	PointOfInterestCategoryStructure .....	119
8.3.6.14	PointOfInterestAdditionalInformationStructure .....	119
8.3.6.15	CategoryKeyValue Type .....	119
8.3.6.16	OsmTagStructure.....	120
8.3.6.17	PointOfInterestFilterStructure.....	120
8.3.6.18	AccessModesListOfEnumerations.....	120
8.3.6.19	AddressRefStructure .....	120
8.3.6.20	AddressRef.....	120
8.3.6.21	AddressStructure.....	120
8.3.6.22	PlaceStructure.....	121
8.3.6.23	PlaceRefStructure.....	121
8.3.6.24	LocationProblemType.....	122
8.3.6.25	ExchangePointsProblemType .....	122
8.3.7	OJP_JourneySupport.....	122
8.3.7.1	General.....	122
8.3.7.2	Simple types.....	122
8.3.7.3	ServiceViaPointStructure.....	123
8.3.7.4	ProductCategoryStructure.....	123
8.3.7.5	TripViaStructure .....	123
8.3.7.6	ParallelServiceStructure .....	124
8.3.7.7	DatedJourneyStructure.....	126
8.3.7.8	TripLocationStructure .....	129

8.3.7.9	ServiceArrivalStructure .....	130
8.3.7.10	ServiceDepartureStructure .....	130
8.3.7.11	CallAtStopStructure.....	131
8.3.7.12	ContinuousServiceStructure .....	131
8.3.7.13	VehiclePositionStructure .....	135
8.3.7.14	ProgressBetweenStopsStructure.....	135
8.3.7.15	PlaceContextStructure.....	135
8.3.7.16	LegAttributeStructure .....	136
8.3.7.17	LegTrackStructure .....	136
8.3.7.18	TrackSectionStructure .....	136
8.3.8	OJP_FacilitySupport .....	136
8.3.8.1	General .....	136
8.3.8.2	siri:CommonFacilityGroup.....	137
8.3.8.3	siri:StopFacilityGroup.....	138
8.3.8.4	siri:ServiceFacilityGroup .....	138
8.3.8.5	siri:AllFacilitiesGroup.....	138
8.3.9	OJP_SituationSupport.....	139
8.3.9.1	General .....	139
8.3.9.2	SituationsStructure.....	139
8.3.9.3	SituationFullRef.....	139
8.3.9.4	SituationFullRefStructure.....	139
8.3.9.5	SituationRefList.....	140
8.3.10	OJP_RequestSupport.....	140
8.3.10.1	General.....	140
8.3.10.2	Simple types .....	140
8.3.10.3	AbstractOJPServiceRequestStructure.....	141
8.3.10.4	OJP delivery structures – PlacesStructure .....	141
8.3.10.5	OJP delivery structures – Operators_RelStructure.....	141
8.3.10.6	OJP delivery structures – ResponseContextStructure .....	141
8.3.10.7	OJP delivery structures – OJPGenericProblemType .....	141
8.3.10.8	OJP DeliveryStructure template & AbstractServiceDeliveryStructure (from SIRI) ..	142
8.3.11	OJP_FareSupport .....	144
8.3.11.1	General.....	144
8.3.11.2	Simple types .....	144
8.3.11.3	BookingNotesStructure.....	147
8.3.11.4	FareAuthorityRefStructure.....	147
8.3.11.5	FareAuthorityRef.....	147
8.3.11.6	TariffZoneRefStructure.....	147
8.3.11.7	TariffZoneRef.....	147
8.3.11.8	TariffZoneStructure.....	147
8.3.11.9	TariffZoneListInAreaStructure .....	147
8.3.11.10	TariffZoneRefListStructure .....	148
8.3.11.11	ContactDetailsStructure.....	148
8.3.11.12	BookingMethodListOfEnumerations.....	148
8.3.11.13	PurchaseMomentListOfEnumerations .....	148
8.3.11.14	BookingProcessListOfEnumerations .....	148
8.3.11.15	GroupBookingListOfEnumerations .....	148
8.3.11.16	BookingArrangementsStructure .....	148
8.3.11.17	BookingArrangementsContainerStructure .....	149
8.3.11.18	FareProductRefStructure .....	149
8.3.11.19	FareProductRef.....	149
8.3.11.20	EntitlementProductListStructure.....	149
8.3.11.21	EntitlementProductStructure.....	150

8.3.11.22	FareProductStructure	150
8.3.11.23	TripFareResultStructure	151
8.3.11.24	FarePassengerStructure	151
8.3.11.25	FareParamStructure	152
8.3.11.26	FareProblemType	152
8.4	Service location information	152
8.4.1	Description	152
8.4.2	Simple types	153
8.4.3	Request structures	153
8.4.3.1	General	153
8.4.3.2	LocationInformationRequestStructure	153
8.4.3.3	InitialLocationInputStructure	154
8.4.3.4	GeoRestrictionsStructure	154
8.4.3.5	GeoCircleStructure	154
8.4.3.6	GeoRectangleStructure	154
8.4.3.7	GeoAreaStructure	155
8.4.3.8	PlaceParamStructure	155
8.4.4	Delivery structures	156
8.4.4.1	General	156
8.4.4.2	LocationInformationDeliveryStructure	156
8.4.4.3	PlaceResultStructure	157
8.5	Service Exchange Points	157
8.5.1	Description	157
8.5.2	Request Structures	158
8.5.2.1	General	158
8.5.2.2	OJPEXchangePointsRequestStructure	158
8.5.2.3	ExchangePointsParamStructure	158
8.5.3	Delivery Structures	159
8.5.3.1	General	159
8.5.3.2	OJPEXchangePointsDeliveryStructure	159
8.5.3.3	ExchangePointsResultStructure	159
8.6	Service intermodal trip planning	160
8.6.1	Description	160
8.6.2	Distributed planning of intermodal trips	160
8.6.3	Simple types	162
8.6.4	Request structures	168
8.6.4.1	General	168
8.6.4.2	OJPTripRequestStructure	168
8.6.4.3	OJPMultiPointTripRequestStructure	169
8.6.4.4	TripParamStructure	169
8.6.4.5	MultiPointTripParamStructure	172
8.6.4.6	NotViaStructure	174
8.6.4.7	NoChangeAtStructure	175
8.6.4.8	TariffZoneFilterStructure	175
8.6.5	Delivery structures	175
8.6.5.1	General	175
8.6.5.2	OJPTripDeliveryStructure	175
8.6.5.3	OJPMultiPointTripDeliveryStructure	176
8.6.5.4	TripResultStructure	176
8.6.5.5	TripProblemType	176
8.6.5.6	MultiPointTripResultStructure	178
8.6.5.7	TripStructure	178
8.6.5.8	TripSummaryStructure	179

8.6.5.9	LegStructure .....	180
8.6.5.10	TimedLegStructure .....	180
8.6.5.11	TransferLegStructure .....	181
8.6.5.12	ContinuousLegStructure .....	182
8.6.5.13	LegBoardStructure .....	182
8.6.5.14	LegAlightStructure .....	183
8.6.5.15	LegIntermediateStructure .....	185
8.6.5.16	PathGuidanceStructure .....	186
8.6.5.17	PathGuidanceSectionStructure .....	186
8.6.5.18	FollowStructure .....	187
8.6.5.19	PathLinkStructure .....	187
8.6.5.20	PathLinkEndStructure .....	187
8.7	Service stop events (departure/arrival monitor) .....	187
8.7.1	Description .....	187
8.7.2	Simple types .....	188
8.7.3	Request structures .....	188
8.7.3.1	General .....	188
8.7.3.2	StopEventRequestStructure .....	189
8.7.3.3	StopEventParamStructure .....	189
8.7.4	Response Structures .....	190
8.7.4.1	General .....	190
8.7.4.2	OJPStopEventDeliveryStructure .....	191
8.7.4.3	StopEventResultStructure .....	191
8.7.4.4	StopEventProblemType .....	191
8.7.4.5	StopEventStructure .....	192
8.7.4.6	CallAtNearStopStructure .....	192
8.8	Service trip information .....	192
8.8.1	Description .....	192
8.8.2	Simple types .....	193
8.8.3	Request structures .....	193
8.8.3.1	General .....	193
8.8.3.2	OJPTripInfoRequestStructure .....	194
8.8.3.3	TripInfoParamStructure .....	194
8.8.4	Response Structures .....	195
8.8.4.1	General .....	195
8.8.4.2	TripInfoDeliveryStructure .....	195
8.8.4.3	TripInfoResultStructure .....	195
8.8.4.4	TripInfoProblemType .....	196
8.9	Service tickets and fare calculation .....	196
8.9.1	Description .....	196
8.9.2	Simple types .....	196
8.9.3	Request structures .....	196
8.9.3.1	General .....	196
8.9.3.2	OJPFareRequestStructure .....	196
8.9.3.3	StopFareRequestStructure .....	197
8.9.3.4	StaticFareRequestStructure .....	197
8.9.3.5	TripFareRequestStructure .....	197
8.9.3.6	MultiTripFareRequestStructure .....	197
8.9.3.7	PlaceFareRequestStructure .....	198
8.9.4	Delivery structures .....	198
8.9.4.1	General .....	198
8.9.4.2	OJPFareDeliveryStructure .....	198
8.9.4.3	FareResultStructure .....	198

8.9.4.4 StopFareResultStructure.....	199
8.9.4.5 StaticFareResultStructure.....	199
8.9.4.6 TripFareProductReferenceStructure .....	200
8.9.4.7 MultiTripFareResultStructure .....	200
8.9.4.8 PlaceFareResultStructure .....	200
8.10 Service for refining a trip .....	200
8.10.1 Description .....	200
8.10.2 Request structures.....	200
8.10.2.1 General .....	200
8.10.2.2 OJPTripRefineRequestStructure.....	201
8.10.2.3 TripRefineParamStructure .....	201
8.10.3 Delivery structures.....	204
8.10.3.1 General .....	204
8.10.3.2 OJPTripRefineDelivery .....	204
8.11 Service for changing a trip .....	205
8.11.1 Request structures.....	205
8.11.1.1 General .....	205
8.11.1.2 OJPTripChangeRequestStructure .....	205
8.11.1.3 TripChangeParamStructure.....	205
8.11.2 Delivery structures.....	206
8.11.2.1 General .....	206
8.11.2.2 OJPTripChangeDeliveryStructure.....	206
8.11.2.3 TripChangeProblemType .....	206
8.12 Service availability of a journey or vehicle.....	207
8.12.1 Description .....	207
8.12.2 Simple types.....	207
8.12.3 Request structures.....	208
8.12.3.1 General .....	208
8.12.3.2 OJPAvailabilityRequestStructure.....	208
8.12.3.3 BookingPTLegStructure .....	208
8.12.3.4 BookingUserStructure .....	210
8.12.3.5 ProvisionedCallAtPlaceStructure .....	211
8.12.4 Delivery structures.....	212
8.12.4.1 General .....	212
8.12.4.2 OJPAvailabilityDeliveryStructure.....	212
8.12.4.3 AvailabilityResultStructure .....	212
8.12.4.4 AvailabilityProblemType.....	213
8.12.4.5 BookableServiceItemStructure .....	213
8.13 Service line information .....	213
8.13.1 Description .....	213
8.13.2 Simple types.....	214
8.13.3 Request structures.....	214
8.13.3.1 General .....	214
8.13.3.2 OJPLineInformationRequestStructure.....	214
8.13.4 Delivery structures.....	214
8.13.4.1 General .....	214
8.13.4.2 OJPLineInformationDeliveryStructure.....	214
8.13.4.3 LineResultStructure.....	214
8.13.4.4 LineInformationProblemType.....	215
8.14 Service status of the server.....	215
8.14.1 Description .....	215
8.14.2 Simple types.....	215
8.14.3 Request structures.....	215

8.14.3.1	General.....	215
8.14.3.2	OJPStatusRequestStructure.....	215
8.14.4	Delivery structures .....	216
8.14.4.1	General.....	216
8.14.4.2	OJPStatusDeliveryStructure .....	216
8.14.4.3	OJPStatusResponseStructure .....	216
8.14.4.4	StatusProblemType .....	217
8.15	Discovery and Capabilities.....	217
<b>Annex A (informative) A distributed approach to journey planning across Europe .....</b>		<b>218</b>
A.1	Fares and Ticketing.....	221
A.2	Enriching in distributed systems.....	221
<b>Annex B (informative) Lessons from experiences of Distributed Journey Planning to date .....</b>		<b>223</b>
B.1	Introduction.....	223
B.2	EU-Spirit.....	223
B.3	Shared journey planning methodology .....	224
B.4	Shift2Rail .....	225
B.5	LinkingAlps .....	227
B.6	OJP4Danube.....	228
B.7	The way distributed journey planning is done in the Nordic countries.....	229
<b>Annex C (informative) Relation between OJP and Transmodel.....</b>		<b>231</b>
C.1	Overview .....	231
C.2	Relevant Diagrams from Transmodel: TRIP .....	231
C.3	Relevant Diagrams from Transmodel: FARE .....	239
C.4	Relevant Diagrams from Transmodel: SERVICE JOURNEY .....	242
C.5	Relevant Diagrams from Transmodel: SITUATION .....	243
C.6	Relevant Diagrams from Transmodel: LOCATION.....	245
C.7	Relevant Diagrams from Transmodel: SCHEDULE .....	247
<b>Annex D (informative) Changes from OJP 1.0.....</b>		<b>248</b>
D.1	List of Changes .....	248
<b>Bibliography .....</b>		<b>254</b>