

# DIN EN 15531-3:2022-10 (E)

## Public transport - Service interface for real-time information relating to public transport operations - Part 3: Functional service interfaces; English version EN 15531-3:2022

---

<b>Contents</b>		<b>Page</b>
1	Scope .....	10
2	Normative references .....	11
3	Terms and definitions .....	11
4	Symbols and abbreviations .....	11
5	Production Timetable Service [PT] .....	11
5.1	Purpose .....	11
5.2	Capability and Permission Matrices .....	11
5.2.1	Capability Matrix .....	11
5.2.2	Permission Matrix .....	13
5.3	ProductionTimetableRequest .....	13
5.3.1	ProductionTimetableRequest — Element .....	13
5.3.2	ProductionTimetableRequest — Example .....	14
5.4	ProductionTimetableSubscriptionRequest .....	15
5.4.1	ProductionTimetableSubscriptionRequest — Element .....	15
5.4.2	ProductionTimetableSubscriptionRequest — Example .....	15
5.5	ProductionTimetableDelivery .....	16
5.5.1	Introduction .....	16
5.5.2	ServiceDelivery with a ProductionTimetableDelivery .....	16
5.5.3	ProductionTimetableDelivery — Element .....	16
5.5.4	DatedTimetableVersionFrame — Element .....	16
5.5.5	ProductionTimetableDelivery — Example .....	30
5.5.6	Efficient Delivery of Large Timetables .....	32
6	Estimated Timetable Service [ET] .....	32
6.1	Purpose .....	32
6.2	Capability and Permission Matrices .....	33
6.2.1	Capability Matrix .....	33
6.2.2	Permission Matrix .....	34
6.3	EstimatedTimetableRequest .....	34
6.3.1	EstimatedTimetableRequest — Element .....	34
6.3.2	EstimatedTimetableRequest — Example .....	36
6.4	EstimatedTimetableSubscriptionRequest .....	36
6.4.1	EstimatedTimetableSubscriptionRequest — Element .....	36
6.4.2	EstimatedTimetableSubscriptionRequest — Example .....	37
6.5	The EstimatedTimetableDelivery .....	38
6.5.1	Introduction .....	38
6.5.2	ServiceDelivery with a EstimatedTimetableDelivery — Element .....	38
6.5.3	EstimatedTimetableDelivery — Element .....	38
6.5.4	EstimatedJourneyVersionFrame — Element .....	38
6.5.5	EstimatedVehicleJourney — Element .....	39
6.5.6	EstimatedServiceJourneyInterchange — Element (SIRI v2.0) .....	49
6.5.7	EstimatedTimetableDelivery — Example .....	54
6.6	Handling of Predictions in the Estimated Timetable Service .....	55
6.6.1	Supplementary Rule for the Delay Profile .....	55
6.6.2	Other Supplementary Rules .....	56
6.6.3	Quality of Prognoses and Prediction Windows .....	56
6.6.4	Reporting Rules and Monitored Journeys .....	56
6.6.5	Temporal Reporting Behaviour – Sensitivity Threshold .....	57

6.6.6	Prediction Inaccurate – In Congestion .....	58
6.6.7	Unexpected Termination of Monitoring.....	59
6.6.8	Missing Expected or Actual Times .....	60
6.7	Prediction Quality.....	60
6.7.1	Definition .....	60
6.7.2	Explicit prediction quality intervals .....	61
6.7.3	Extrapolation rule for prediction quality .....	61
6.8	General Rules and Definitions for Timetable Data.....	62
6.8.1	Introduction.....	62
6.8.2	Cancelled Vehicle Journeys .....	62
6.8.3	Additional Vehicle Journeys.....	62
6.8.4	Changes to Journeys & Routings.....	63
6.8.5	Changes to Call Attributes.....	63
6.8.6	Planned Connections and “Stay Seated” Connections .....	63
6.8.7	Handling Train Data.....	64
6.8.8	Validity Period of Production Timetables .....	64
6.8.9	Initial State and Complete Stop Sequences.....	64
6.8.10	Usage of Optional Elements with Default Values.....	64
7	Stop Timetable Service [ST] .....	65
7.1	Purpose.....	65
7.2	Reference Data.....	65
7.3	Capability and Permission Matrices .....	65
7.3.1	Capability Matrix.....	65
7.3.2	Permission Matrix .....	66
7.4	StopTimetableRequest.....	67
7.4.1	StopTimetableRequest — Element.....	67
7.4.2	StopTimetableRequest — Example .....	68
7.5	StopTimetableSubscriptionRequest .....	68
7.5.1	StopTimetableSubscriptionRequest — Element .....	68
7.5.2	StopTimetableSubscriptionRequest — Example .....	69
7.6	StopTimetableDelivery.....	69
7.6.1	Introduction.....	69
7.6.2	ServiceDelivery with a StopTimetableDelivery.....	69
7.6.3	StopTimetableDelivery — Element.....	69
7.6.4	TimetabledStopVisit — Element .....	70
7.6.5	TargetedVehicleJourney — Element.....	70
7.6.6	TargetedCall — Element.....	70
7.6.7	TimetabledStopVisitCancellation — Element .....	71
7.6.8	StopTimetableDelivery — Example .....	72
8	Stop Monitoring Service [SM] .....	73
8.1	Purpose.....	73
8.2	Reference Data.....	73
8.2.1	Introduction.....	73
8.2.2	Content Referencing.....	74
8.2.3	Direct Cleardown .....	74
8.3	Capability and Permission Matrices .....	74
8.3.1	Capability Matrix.....	74
8.3.2	Permission Matrix .....	76
8.4	StopMonitoringRequest.....	76
8.4.1	StopMonitoringRequest — Element.....	76
8.4.2	Use of Preview Interval.....	78
8.4.3	Use of Maximum and Minimum Number of Trips .....	78
8.5	StopMonitoringMultipleRequest.....	79
8.5.1	StopMonitoringMultipleRequest — Element.....	79
8.5.2	StopMonitoringRequest — Example .....	80
8.6	StopMonitoringSubscriptionRequest .....	80
8.6.1	StopMonitoringSubscriptionRequest — Element.....	80
8.6.2	Sensitivity Threshold.....	81
8.6.3	StopMonitoringSubscriptionRequest -Example .....	82

8.7	StopMonitoringDelivery .....	82
8.7.1	Introduction .....	82
8.7.2	ServiceDelivery with a StopMonitoringDelivery — Element.....	82
8.7.3	StopMonitoringDelivery — Element.....	83
8.7.4	MonitoredStopVisit — Element.....	84
8.7.5	MonitoredStopVisitCancellation — Element.....	98
8.7.6	StopLineNotice — Element.....	99
8.7.7	StopLineNoticeCancellation — Element.....	100
8.7.8	StopNotice — Element (+SIRI v2.0).....	100
8.7.9	StopNoticeCancellation — Element (+SIRI v2.0).....	101
8.7.10	ServiceException — Element (+SIRI v2.0).....	101
8.7.11	StopMonitoringDelivery — Examples .....	102
8.8	Using the Stop Timetable & Stop Monitoring services together.....	106
9	Vehicle Monitoring Service [VM].....	106
9.1	Purpose.....	106
9.2	Reference Data.....	107
9.3	Capability and Permission Matrices .....	107
9.3.1	Capability Matrix.....	107
9.3.2	Permission Matrix .....	108
9.4	VehicleMonitoringRequest.....	109
9.4.1	VehicleMonitoringRequest — Element.....	109
9.4.2	VehicleMonitoringRequest — Example .....	110
9.5	VehicleMonitoringSubscriptionRequest.....	111
9.5.1	VehicleMonitoringSubscriptionRequest — Element.....	111
9.5.2	Sensitivity Threshold.....	111
9.5.3	VehicleMonitoringSubscriptionRequest — Example .....	112
9.6	VehicleMonitoringDelivery.....	112
9.6.1	Introduction.....	112
9.6.2	ServiceDelivery with a VehicleMonitoringDelivery — Element.....	112
9.6.3	VehicleMonitoringDelivery — Element.....	113
9.6.4	VehicleActivity — Element .....	113
9.6.5	VehicleActivityCancellation — Element.....	118
9.6.6	VehicleMonitoringDelivery — Examples .....	119
10	Connection Timetable Data Service [CT].....	121
10.1	Purpose.....	121
10.2	Reference Data.....	122
10.2.1	Content referencing .....	122
10.2.2	Availability of Data .....	123
10.2.3	Updating During the Course of a Journey.....	124
10.3	Capability and Permission Matrices .....	124
10.3.1	Capability Matrix.....	124
10.3.2	Permission Matrix .....	125
10.4	ConnectionTimetableRequest.....	125
10.4.1	ConnectionTimetableRequest — Element.....	125
10.4.2	ConnectionTimetableRequest — Example .....	126
10.5	ConnectionTimetableSubscriptionRequest.....	127
10.5.1	ConnectionTimetableSubscriptionRequest — Element.....	127
10.5.2	ConnectionTimetableSubscriptionRequest — Example .....	127
10.6	ConnectionTimetableDelivery .....	127
10.6.1	Introduction.....	127
10.6.2	ServiceDelivery with a ConnectionTimetableDelivery — Element.....	127
10.6.3	ConnectionTimetableDelivery — Element.....	128
10.6.4	ConnectionTimetableDelivery — Example .....	130
11	Connection Monitoring Service [CM].....	131
11.1	Purpose.....	131
11.1.1	Introduction.....	131
11.1.2	Dated Vehicle-Journey-Based Connection Protection.....	132

11.1.3	Time-Based Connection Protection .....	132
11.2	Capability and Permission Matrices .....	133
11.2.1	Capability Matrix.....	133
11.2.2	Permission Matrix .....	134
11.3	The ConnectionMonitoringRequest .....	134
11.3.1	ConnectionMonitoringRequest — Element.....	134
11.3.2	Use of PreviewInterval.....	135
11.3.3	ConnectingTimeFilter — Element.....	136
11.3.4	ConnectingJourneyFilter — Element .....	136
11.3.5	ConnectionMonitoringRequest — Example .....	136
11.4	The ConnectionMonitoringSubscriptionRequest .....	137
11.4.1	ConnectionMonitoringSubscriptionRequest — Element .....	137
11.4.2	Sensitivity Threshold.....	137
11.4.3	ConnectionMonitoringSubscriptionRequest — Example .....	138
11.5	ServiceDelivery with Connection Monitoring Deliveries — Element.....	138
11.5.1	Introduction .....	138
11.5.2	The ConnectionMonitoringFeederDelivery — Element .....	138
11.5.3	The ConnectionMonitoringDistributorDelivery — Element.....	142
12	General Message Service [GM] .....	146
12.1	Purpose.....	146
12.2	Reference Data .....	147
12.2.1	Use of Reference Data.....	147
12.2.2	Message Formats.....	147
12.3	Capability and Permission Matrices .....	147
12.3.1	Capability Matrix.....	147
12.3.2	Permission Matrix .....	148
12.4	The GeneralMessageRequest.....	149
12.4.1	GeneralMessageRequest — Element .....	149
12.4.2	GeneralMessageRequest — Example.....	149
12.5	The GeneralMessageSubscriptionRequest.....	149
12.5.1	GeneralMessageSubscriptionRequest — Element.....	149
12.5.2	GeneralMessageSubscriptionRequest — Example .....	150
12.6	The GeneralMessageDelivery .....	150
12.6.1	Introduction .....	150
12.6.2	ServiceDelivery with a GeneralMessageDelivery .....	150
12.6.3	GeneralMessageDelivery — Element.....	150
12.6.4	InfoMessage — Element.....	151
12.6.5	InfoMessageCancellation — Element .....	151
12.6.6	GeneralMessageDelivery — Example .....	152