

# ISO 14229-1:2006-12 (E)

## Road vehicles - Unified diagnostic services (UDS) - Part 1: Specification and requirements

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
1	Scope .....	1
2	Normative references .....	2
3	Terms and definitions .....	3
4	Symbols and abbreviated terms .....	5
5	Conventions .....	5
6	Application layer services .....	6
6.1	General .....	6
6.2	Format description of application layer services .....	8
6.3	Format description of standard service primitives .....	8
6.4	Format description of remote service primitives .....	10
6.5	Service data unit specification .....	13
7	Application layer protocol .....	19
7.1	General definition .....	19
7.2	Protocol data unit specification .....	19
7.3	Application protocol control information .....	19
7.4	Negative response/confirmation service primitive .....	21
7.5	Server response implementation rules .....	22
8	Service description conventions .....	29
8.1	Service description .....	29
8.2	Request message .....	30
8.3	Positive response message .....	32
8.4	Supported negative response codes (NRC_) .....	34
8.5	Message flow examples .....	34
9	Diagnostic and communication management functional unit .....	36
9.1	Overview .....	36
9.2	DiagnosticSessionControl (10 hex) service .....	36
9.3	ECUReset (11 hex) service .....	42
9.4	SecurityAccess (27 hex) service .....	45
9.5	CommunicationControl (28 hex) service .....	52
9.6	TesterPresent (3E hex) service .....	55
9.7	AccessTimingParameter (83 hex) service .....	58
9.8	SecuredDataTransmission (84 hex) service .....	63
9.9	ControlDTCSetting (85 hex) service .....	69
9.10	ResponseOnEvent (86 hex) service .....	73
9.11	LinkControl (87 hex) service .....	91
10	Data transmission functional unit .....	97
10.1	Overview .....	97
10.2	ReadDataByIdentifier (22 hex) service .....	97

10.3	ReadMemoryByAddress (23 hex) service .....	102
10.4	ReadScalingDataByIdentifier (24 hex) service .....	106
10.5	ReadDataByPeriodicIdentifier (2A hex) service .....	112
10.6	DynamicallyDefineDataIdentifier (2C hex) service .....	123
10.7	WriteDataByIdentifier (2E hex) service .....	143
10.8	WriteMemoryByAddress (3D hex) service .....	146
11	Stored data transmission functional unit .....	152
11.1	Overview .....	152
11.2	ClearDiagnosticInformation (14 hex) service .....	152
11.3	ReadDTCInformation (19 hex) service .....	154
12	InputOutput control functional unit .....	208
12.1	Overview .....	208
12.2	InputOutputControlByIdentifier (2F hex) service .....	209
13	Remote activation of routine functional unit .....	224
13.1	Overview .....	224
13.2	RoutineControl (31 hex) service .....	225
14	Upload download functional unit .....	231
14.1	Overview .....	231
14.2	RequestDownload (34 hex) service .....	231
14.3	RequestUpload (35 hex) service .....	234
14.4	TransferData (36 hex) service .....	237
14.5	RequestTransferExit (37 hex) service .....	242
Annex A (informative) Global parameter definitions .....		250
Annex B (normative) Diagnostic and communication management functional unit data parameter definitions .....		257
Annex C (normative) Data transmission functional unit data parameter definitions .....		259
Annex D (normative) Stored data transmission functional unit data parameter definitions .....		272
Annex E (normative) Input output control functional unit data parameter definitions .....		289
Annex F (normative) Remote activation of routine functional unit data parameter definitions .....		290
Annex G (informative) Examples for addressAndLengthFormatIdentifier parameter values .....		291
Bibliography .....		293