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| Unified Diagnostic Services (UDS) –  Diagnostic Protocol  (based on ISO 14229-1) |

**Engine ECU REQUIREMENTS**

* Read services will work in any diagnostic session
* Write services will work in programming session
* Routine services will work in programming session
* Write request will return negative response 0x11 in default session
* Routine request will return negative response 0x11 in default session
* Default session is active by default
* Programming session can be always accessed

**Diagnostic services messages**

* Change session
  + Request message:
    - ID: 0x9
    - Data: 12 01 xx 00 00 00 00 00 (xx= new session no, 1-default,2-programming)
  + Response:
    - ID: 0x80
    - Positive: 52 01 xx 00 00 00 00 00
    - Negative: not allowed
* READ supports following subservices:
* Read serial no – serial number of the ECU is initially 1122
  + Request message:
    - ID: 0x9
    - Data: 22 01 00 00 00 00 00 00
  + Response:
    - ID: 0x80
    - Positive: 62 01 ss ss 00 00 00 00 (ssss = actual serial)
    - Negative: Not allowed
* Read RPM – RPM must be in range (0 – 5000)
  + Request message:
    - ID: 0x9
    - Data: 22 02 00 00 00 00 00 00
  + Response:
    - ID: 0x80
    - Positive: 62 02 rr rr 00 00 00 00 (rrrr = actual RPM)
    - Negative: Not allowed
* WRITE supports following subservices
* Write serial number
  + Request message:
    - ID: 0x9
    - Data: 32 01 xx xx 00 00 00 00(xx xx = new serial number)
  + Response:
    - ID: 0x80
    - Positive: 72 01 00 00 00 00 00 00
    - Negative: 7f 11 00 00 00 00 00 00 -> Session not correct
* Write last service checkup
  + Request message:
    - Subservice 02 is not supported in Write
    - Response:
    - ID: 0x80
    - Negative: 7f 12 00 00 00 00 00 00 -> Subservice not supported

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| Requirement\_ID | Description | Implementation status | Test case ID | Test status |
| 1  3 | READ works in any session | IMPLEMENTED | 1,2 | See HTML report |
| 2 | WRITE works only in programming session | IMPLEMENTED | 3,4 | See HTML  report |
| 3 | WRITE returns  negative response in default session | IMPLEMENTED | 3,4 | See HTML  Report |
| 4 | ROUTINE works in programming session | NOT IMPLEMENTED |  |  |
| 5 | DEFAULT session is active by default | IMPLEMENTED | 1,2,3,4 | See HTML  Report |
| 6 | PROGRAMMING session can be always accessed | IMPLEMENTED | 1,2,3,4 | See HTML  Report |