

# Secure Vehicle Communication



## Event Data Recorder

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Current status in US and Europe

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- Definition: EDR records technical vehicle and occupant information for a brief period of time (seconds, not minutes) before, during and after a crash
- The National Transportation Safety Board (NTSB) recommended to National Highway Traffic Safety Administration (NHTSA) on Aug 2, 2004, that all newly manufactured passenger vehicles include EDRs
- Currently proprietary EDRs installed in light-duty and heavy commercial vehicles
- In September 2004 the IEEE approved the world's first automotive black-box standard for EDRs
  - IEEE1616 Motor Vehicle Event Data Recorders (MVEDRs)
  - specifies minimal performance characteristics for onboard tamper- and crash-proof memory devices for all types and classes of highway and roadway vehicles
  - data dictionary of 86 data elements and covers device survivability
  - defines a protocol for MVEDR output data compatibility and export protocols of MVEDR data elements
- OEM EDRs complies with SAE J1698 family of standards
  - SAE J1698 is response of OEMs to IEEE1616
  - Record up to 2-seconds prior to the moment of airbag deployment (only if an airbag deploys!)



- Current status
  - Security/Privacy
    - Tamper-proofed device?
    - no encryption
    - Six US states have passed EDR legislation (20 have draft legislation)
      - Most indicate that the EDR data belongs to the vehicle owner
      - All make allowances for data to be downloaded against an owner's wishes if so ordered by a court with jurisdiction
      - some allow access to others under certain circumstances (e.g., technicians repairing vehicles--even though EDR data will never help anyone repair a vehicle)
  - Rule
    - Currently no rule
    - NPRM (notice of proposed rulemaking) of NHTSA was very controversial (strong requirements for OEMs)
    - The draft final rule has apparently been under review in the Secretary of Transportation Office for 6 months or more
    - Considerable negative press in the US about "black boxes" (EDRs)



- EDR in controversial discussion
- OEMs do not push the installation
- Peter Schaar, German Federal Commissioner for Privacy
  - EDRs could harm the European base right on privacy
  - Only voluntary mounting of EDR in passenger vehicles (but without economic constraint)
  - Obligatory mounting in buses and hazardous-goods trucks
  - EU Art.29 Data protection Working Party ([http://europa.eu.int/comm/justice\\_home/fsj/privacy/index\\_en.htm](http://europa.eu.int/comm/justice_home/fsj/privacy/index_en.htm))