TABLE II.—DATA ELEMENTS REQUIRED FOR VEHICLES UNDER SPECIFIED CONDITIONS—Continued

Data element name	Condition for requirement	Recording interval/ time [1] (relative to time zero)	Data sample rate (per second)
Vehicle roll angle	If recorded	−1.0 up to 5.0 sec [3]	10
ABS activity (engaged, non-engaged)	If recorded	−5.0 to 0 sec	2
Stability control (on, off, engaged)	If recorded	−5.0 to 0 sec	2
Steering input	If recorded	−5.0 to 0 sec	2
Safety belt status, right front passenger (buckled, not buckled)	If recorded	−1.0 sec	N.A.
Frontal air bag suppression switch status, right front passenger (on, off, or auto).	If recorded	−1.0 sec	N.A.
Frontal air bag deployment, time to n^{th} stage, driver [4]	If equipped with a driver's frontal air bag with a multi-stage inlator.	Event	N.A.
Frontal air bag deployment, time to n^{th} stage, right front passenger [4].	If equipped with a right front passenger's frontal air bag with a multi-stage inflator.	Event	N.A.
Frontal air bag deployment, n^{th} stage disposal, driver, Y/N (whether the n^{th} stage deployment was for occupant restraint or propellant disposal purposes).	If recorded	Event	N.A.
Frontal air bag deployment, n^{th} stage disposal, right front passenger, Y/N (whether the n^{th} stage deployment was for occupant restraint or propellant disposal purposes).	If recorded	Event	N.A.
Side air bag deployment, time to deploy, driver	If recorded	Event	N.A.
Side air bag deployment, time to deploy, right front passenger	If recorded	Event	N.A.
Side curtain/tube air bag deployment, time to deploy, driver side	If recorded	Event	N.A.
Side curtain/tube air bag deployment, time to deploy, right side	If recorded	Event	N.A.
Pretensioner deployment, time to fire, driver	If recorded	Event	N.A.
Pretensioner deployment, time to fire, right front passenger	If recorded	Event	N.A.
Seat track position switch, foremost, status, driver	If recorded	−1.0 sec	N.A.
Seat track position switch, foremost, status, right front passenger.	If recorded	−1.0 sec	N.A.
Occupant size classification, driver	If recorded	−1.0 sec	N.A.
Occupant size classification, right front passenger	If recorded	−1.0 sec	N.A.
Occupant position classification, driver	If recorded	−1.0 sec	N.A.
Occupant position classification, right front passenger	If recorded	−1.0 sec	N.A.

[1] Pre-crash data and crash data are asynchronous. The sample time accuracy requirement for pre-crash time is −0.1 to 1.0 sec (e.g. T = −1 would need to occur between −1.1 and 0 seconds.)
[2] "If recorded" means if the data is recorded in non-volatile memory for the purpose of subsequent downloading.
[3] "Vehicle roll angle" may be recorded in any time duration, −1.0 sec to 5.0 sec is suggested.
[4] List this element n−1 times, once for each stage of a multi-stage air bag system.

§ 563.8 Data format.

(a) The data elements listed in Tables I and II, as applicable, must be recorded in accordance with the range, accuracy, resolution, and filter class specified in Table III.

TABLE III.—RECORDED DATA ELEMENT FORMAT

Data element	Range	Accuracy	Resolution	Filter class
Lateral acceleration	−50 g to +50 g	±5%	0.01 g	SAE J211–1,[1] Class 60.
Longitudinal acceleration	−50 g to +50 g	±5%	0.01 g	SAE J211–1,[1] Class 60.
Normal Acceleration	−50 g to +50 g	±5%	0.01 g	SAE J211–1,[1] Class 60.
Longitudinal delta-V	−100 km/h +100 km/h.	±5%	1 km/h	N.A.
Lateral delta-V	−100 km/h to +100 km/h.	±5%	1 km/h	N.A.
Maximum delta-V, longitudinal	+100 km/h +100 km/h.	±5%	1 km/h	N.A.
Maximum delta-V, lateral	−100 km/h to +100 km/h.	±5%	1 km/h	N.A.
Time, maximum delta-V, longitudinal.	0–300 ms	±3 ms	2.5 ms	N.A.
Time, maximum delta-V, lateral	0–300 ms	±3 ms	2.5 ms	N.A.

TABLE III.—RECORDED DATA ELEMENT FORMAT—Continued

Data element	Range	Accuracy	Resolution	Filter class
Time, maximum delta-V, resultant.	0–300 ms	±3 ms	2.5 ms	N.A.
Vehicle Roll Angle	−1080 deg to +1080 deg.	±10 deg	10 deg	N.A.
Speed, vehicle indicated	0 km/h to 200 km/h	±1 km/h	1 km/h	N.A.
Engine throttle, percent full (accelerator pedal percent full).	0 to 100%	±5%	1%	N.A.
Engine rpm	0 to 10,000 rpm	±100 rpm	100 rpm	N.A.
Service brake, on, off	On and Off	N.A	On and Off	N.A.
ABS activity	On and Off	N.A	On and Off	N.A.
Stability control (on, off, engaged).	On, Off, Engaged	N.A	On, Off, Engaged	N.A.
Steering wheel angle	−250 deg CW to +250 deg CCW.	±5 deg	5 deg	N.A.
Ignition cycle, crash	0 to 60,000	±1 cycle	1 cycle	N.A.
Ignition cycle, download	0 to 60,000	±1 cycle	1 cycle	N.A.
Safety belt status, driver	On or Off	N.A	On or Off	N.A.
Safety belt status, right front passenger.	On or Off	N.A	On or Off	N.A.
Frontal air bag warning lamp (on, off).	On or Off	N.A	On or Off	N.A.
Frontal air bag suppression switch status.	On or Off	N.A	On or Off	N.A.
Frontal air bag deployment, time to deploy/first stage, driver.	0 to 250 ms	±2 ms	1 ms	N.A.
Frontal air bag deployment, time to deploy/first stage, right front passenger.	0 to 250 ms	±2 ms	1 ms	N.A.
Frontal air bag deployment, time to n^{th} stage, driver.	0 to 250 ms	±2 ms	1 ms	N.A.
Frontal air bag deployment, time to n^{th} stage, right front passenger.	0 to 250 ms	±2 ms	1 ms	N.A.
Frontal air bag deployment, n^{th} stage disposal, driver, y/n.	Yes/No	N.A	Yes/No	N.A.
Frontal air bag deployment, n^{th} stage disposal, right front passenger, y/n.	Yes/No	N.A.	Yes/No	N.A.
Side air bag deployment, time to deploy, driver.	0 to 250 ms	±2 ms	1 ms	N.A.
Side air bag deployment, time to deploy, right front passenger.	0 to 250 ms	±2 ms	1 ms	N.A.
Side curtain/tube air bag deployment, time to deploy, driver side.	0 to 250 ms	±2 ms	1 ms	N.A.
Side curtain/tube air bag deployment, time to deploy, right side.	0 to 250 ms	±2 ms	1 ms	N.A.
Pretensioner deployment, time to fire, driver.	0 to 250 ms	±2 ms	1 ms	N.A.
Pretensioner deployment, time to fire, right front passenger.	0 to 250 ms	±2 ms	1 ms	N.A.
Seat track position switch, foremost, status, driver.	Yes/No	N.A	Yes/No	N.A.
Seat track position switch, foremost, status, right front passenger.	Yes/No	N.A	Yes/No	N.A.
Occupant size driver occupant 5th female size y/n.	Yes/No	N.A	Yes/No	N.A.
Occupant size right front passenger child y/n.	Yes/No	N.A	Yes/No	N.A.
Occupant position classification, driver oop y/n.	Yes/No	N.A	Yes/No	N.A.
Occupant position classification, right front passenger oop y/n.	Yes/No	N.A	Yes/No	N.A.
Multi-event, number of events (1, 2).	1 or 2	N.A	1 or 2	N.A.
Time from event 1 to 2	0 to 5.0 sec	0.1 sec	0.1 sec	N.A.
Complete file recorded (yes/no)	Yes/No	N.A	Yes/No	N.A.

[1] Incorporated by reference, *see* § 563.4.

(b) Acceleration Time-History data and format: The longitudinal, lateral, and normal acceleration time-history data, as applicable, must be filtered in accordance with the filter class specified in Table III either during the recording phase or during the data downloading phase to include:

(1) The Time Step (TS) that is the inverse of the sampling frequency of the acceleration data and which has units of seconds;

(2) The number of the first point (NFP), which is an integer that when multiplied by the TS equals the time relative to time zero of the first acceleration data point;

(3) The number of the last point (NLP), which is an integer that when multiplied by the TS equals the time relative to time zero of the last acceleration data point; and

(4) NLP − NFP+1 acceleration values sequentially beginning with the acceleration at time NFP*TS and continue sampling the acceleration at TS increments in time until the time NLP*TS is reached.

§ 563.9 Data capture.

The EDR must capture and record the data elements for events in accordance with the following conditions and circumstances:

(a) In an air bag deployment crash, the data recorded from any previous crash must be deleted (both events). The data related to the deployment must be captured and recorded. The memory must be locked to prevent any future overwriting of these data.

(b) In an air bag non-deployment crash that meets the trigger threshold, delete all previously recorded data in the EDR's memory. Capture and record the current data, up to two events. In the case of two events, detection of the second event starts after the End of Event Time for event 1.

§ 563.10 Crash test performance and survivability.

(a) Each vehicle subject to the requirements of S5, S14.5, S15, or S17 of 49 CFR 571.208, *Occupant crash protection*, must comply with the requirements in subpart (c) of this section when tested according to S8, S16, and S18 of 49 CFR 571.208.

(b) Each vehicle subject to the requirements of 49 CFR 571.214, *Side impact protection*, that meets a trigger threshold or has a frontal air bag deployment, must comply with the requirements of subpart (c) of this section when tested according to the conditions specified in 49 CFR 571.214 for a moving deformable barrier test.

(c) The data elements required by § 563.7, except for the ''Engine throttle, percent full,'' ''engine RPM,'' and ''service brake, on/off,'' must be recorded in the format specified by § 563.8, exist at the completion of the crash test, and be retrievable by the methodology specified by the vehicle manufacturer under § 563.12 for not less than 10 days after the test, and the complete data recorded element must read ''yes'' after the test.

§ 563.11 Information in owner's manual.

(a) The owner's manual in each vehicle covered under this regulation must provide the following statement in English:

This vehicle is equipped with an event data recorder (EDR). The main purpose of an EDR is to record, in certain crash or near crash-like situations, such as an air bag deployment or hitting a road obstacle, data that will assist in understanding how a vehicle's systems performed. The EDR is designed to record data related to vehicle dynamics and safety systems for a short period of time, typically 30 seconds or less. The EDR in this vehicle is designed to record such data as:

- How various systems in your vehicle were operating;
- Whether or not the driver and passenger safety belts were buckled/fastened;
- How far (if at all) the driver was depressing the accelerator and/or brake pedal; and,
- How fast the vehicle was traveling.

These data can help provide a better understanding of the circumstances in which crashes and injuries occur. NOTE: EDR data are recorded by your vehicle only if a non-trivial crash situation occurs; no data are recorded by the EDR under normal driving conditions and no personal data (e.g., name, gender, age, and crash location) are recorded. However, other parties, such as law enforcement, could combine the EDR data with the type of personally identifying data routinely acquired during a crash investigation.

To read data recorded by an EDR, special equipment is required, and access to the vehicle or the EDR is needed. In addition to the vehicle manufacturer, other parties, such as law enforcement, that have the special