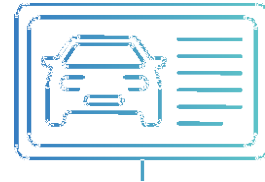




Claims Reporter – Data Dictionary

OVERVIEW OF FIELDS RETURNED VIA JSON FORMATTED MESSAGE

Claims Reporter data fields are populated with measured data acquired by sensors embedded in the smartphone and Tag (if present), and with information derived from that data using algorithms validated against claims data. Information from trusted third-party sources (such as weather data) and automatically generated results (such as unique identifiers for objects) are also included.



This data is used to render a robust Crash Storyline on the DriveWell Portal and is available for posting in JSON message format to an Amazon S3 bucket. Data may also be queried directly via an API call.

The table below describes all data fields returned by the Claims Reporter via JSON message. A sample JSON message is included on page 7.

Data Fields Returned by Claims Reporter

Data Field	Data Type	Description
crash_id	integer	A unique identifier for the crash assigned by CMT.
driver_id	string	A unique identifier for the driver provided by the customer. If requested, CMT can generate a Universally Unique Identifier (UUID) for this field.
device_id	string	A unique identifier for the smartphone. This is typically a CMT-generated UUID but can be provided by the customer. Example: "CDBA4D8A-1457-510E-F2E9-A0F9E88E3776"
drive_id	string	A unique identifier for the trip during which the crash occurred. This is typically a CMT-generated UUID but can be provided by the customer.
impact_id	integer	<i>Included only for customers who also have Crash Detector.</i> 64-bit integer that uniquely identifies the event, for use in the API call back to CMT when requesting position details. Serves as a common field between Claims Studio's Crash Detector and Claims Reporter products for the purpose of identifying an impact event.

Data Field	Data Type	Description
tag_mac_address	string	<p><i>Relevant only to App+Tag programs.</i></p> <p>The MAC Address of the Tag installed in the vehicle.</p> <p>Formatted as six lower-case, hexadecimal, colon-separated octets.</p> <p>Example:</p> <p>"4c:b8:2c:00:00:01"</p>
narrative	string	Human-readable, written description of the crash.
severity	float	<p>Severity of crash.</p> <p>Values range from "0" to "100" (most severe).</p>
hit_direction	string	<p>The part of the vehicle that was hit.</p> <p>Values are "front", "rear", "left", "right".</p>
front_hit rear_hit left_hit right_hit	float	Percentages representing the decomposition of the acceleration at the time of impact, showing the degree to which each side of the vehicle (front, rear, left, right) was exposed to the force of the collision.
weather	array	<p>Weather data observed for the general geographic area in which the crash took place, typically within a 60-minute window around the crash.</p> <p>Contains several sub-fields: "observation_time", "weather_text", "precipitation_type", "temperature", "wind_direction_degrees", "wind_direction_text", "wind_speed", "wind_gust_speed", "visibility", and "is_day_time".</p> <p>Note: Weather data appears only for crashes received by the CMT backend within 24-hours of impact.</p>
observation_time	integer	<p>A sub-field to "weather".</p> <p>The date and time of the weather observation. Displayed as the number of milliseconds that have elapsed since January 1, 1970 (midnight UTC/GMT).</p>
weather_text	string	<p>A sub-field to "weather".</p> <p>Brief description of weather conditions at the time of observation.</p> <p>For example, "Sunny", "Cloudy", etc.</p>

Data Field	Data Type	Description
precipitation_type	string	A sub-field to "weather". The type of precipitation that was present at the time of observation. Values are "rain", "snow", "ice", "mixed", or null (if no precipitation).
temperature	float	A sub-field to "weather". The temperature in Celsius at the time of observation.
wind_direction_degrees	integer	A sub-field to "weather". Wind direction in degrees at the time of weather observation.
wind_direction_text	string	A sub-field to "weather". Text identifying the direction of wind at the time of weather observation. For example, "NNE".
wind_speed	integer	A sub-field to "weather". The wind speed in kilometers per hour (km/h) at the time of weather observation.
wind_gust_speed	integer	A sub-field to "weather". Wind gust speed in kilometers per hour (km/h) at the time of weather observation.
visibility	integer	A sub-field to "weather". Visibility in kilometers at the time of weather observation.
is_day_time	integer	A sub-field to "weather". Whether the crash occurred during daytime. Values are true for daytime or false for nighttime.
driver_facing_sun	boolean	If the driver was driving into the sun. Values are true, false, or null (if unknown).
coords	array	Latitude (lat) and longitude (lng) coordinates of locations during the crash with timestamps (time) in milliseconds.

Data Field	Data Type	Description
before_coords	array	Latitude (lat) and longitude (lng) coordinates of location before the crash with timestamps (time) in milliseconds.
after_coords	array	Latitude (lat) and longitude (lng) coordinates of location after the crash with timestamps (time) in milliseconds.
gps_speed	array	Timestamps, speed in km/h from GPS.
prior_phone_use	boolean	Whether a phone motion event occurred in the 60 seconds prior to the crash. Values are true, false, or null (if unknown). A response of true is returned if any part of the phone motion event occurs within the 60-second window.
prior_speeding	boolean	Whether a speeding event occurred in the 60 seconds prior to the crash. Values are true, false, or null (if unknown). A response of true is returned if any part of the speeding event occurs within the 60-second window.
event_markers	array	Identifies that an event occurred within the time period of 60 seconds prior to the start of the crash to 60 seconds after the crash ended. The event_markers field appears once for each event detected and is included if any part of an event occurs within this time span. It includes several sub-fields: "event_type", "start_ts_millis", "end_ts_millis", "lon", "lat", "speed", "duration", and "max_force".
event_type	string	A sub-field to event_markers. Identifies the specific event detected. Values can be any of the following: <ul style="list-style-type: none"> "hard_accel" for a hard acceleration event. "hard_brake" for a hard braking event. "hard_turn" for a hard cornering event. "speeding" for a speeding event. "phone_motion" for a phone motion event (that is, whether the phone was being moved around versus being mounted/hands free).

Data Field	Data Type	Description
start_ts_millis	integer	A sub-field to event_markers. Timestamp when the event began in milliseconds.
end_ts_millis	integer	A sub-field to event_markers. Timestamp when the event ended in milliseconds.
lat lon	float	Sub-fields to event_markers. Latitude (lat) and longitude (lon) coordinates of the event.
speed	float	A sub-field to event_markers. Speed at the time the event was detected in kilometers per hour (km/h).
duration	float	A sub-field to event_markers. The duration of the event in milliseconds.
max_force	float	A sub-field to event_markers. This value only appears for acceleration-based events.
impact_speed	float	Speed at the moment of largest impact in kilometers per hour (km/h).
speed_before	float	Speed before the crash in kilometers per hour (km/h).
speed_after	float	Speed after the crash in kilometers per hour (km/h).
delta_v	float	Change in speed during the crash in kilometers per hour (km/h) as captured by GPS. Value will be negative for a head-on crash.
delta_t	float	Duration of the crash in seconds.
start_time	float	Timestamp when the crash began in milliseconds (Unix epoch).
main_impact_time	float	Timestamp when the main impact occurred in milliseconds (Unix epoch).
end_time	float	End time of the crash event in milliseconds (Unix epoch).
num_impacts	integer	Number of crash events detected.

Data Field	Data Type	Description
driver_maneuver	string	Evasive maneuver the driver took (such as, "Braking") to avoid the crash. If no evasive maneuver was attempted, this field returns a value of "No Reaction".
driver_direction	string	The direction the vehicle was traveling when the crash occurred. Values are "N", "S", "E", "W", "NW", "NE", "SW", "SE" or null (if unknown).
driver_bearing	float	The direction the vehicle was heading, in degrees from North.
airbag_deployed	boolean	Whether an airbag was deployed. Values are true, false, or null (if unknown).
vehicle_spin	boolean	Whether there was yaw rotation, resulting in the vehicle's center of gravity shifting left or right during the crash. Values are true or false. If unable to determine, this field returns a value false.
rollover	boolean	Whether the vehicle rolled over during the crash. Values are true, false, or null (if unknown).
continue_driving	boolean	If driver continued with the recorded trip after the crash. Values are true or false.
crash_lat	float	Latitude at the instant of largest crash
crash_lng	float	Longitude at the instant of largest crash.
accel_lat_data accel_lon_data accel_vert_data	array	Accelerometer data around the crash in the lateral (lat), longitudinal (lon), and vertical (vert) directions. Timestamps (x-axis), acceleration (y-axis) in m/s ² . Acceleration unit does not change with localization.
status	string	The status of the crash processing by CMT. Unless there is an unusual error, it should always return a value of "Completed".
error_msg	string	Error message. Included only if an error occurred.

Example JSON Message

The example below is a truncated version of the data fields listed in the table above. Red ellipses "..." denote a truncated array; many similar values will follow.

```
{
  "crash_id": 133611,
  "driver_id": "38cbb790c37049a29b21d479c2e361df",
  "device_id": "CDBA4D8A-1457-510E-F2E9-A0F9E88E3776",
  "drive_id": "A69CD512-A03F-4E80-B270-E6A30E3209EF",
  "impact_id": 198,
  "tag_mac_address": "4c:b8:2c:5e:dd:b1",
  "narrative": "The driver was traveling north along %LOCATION_STREET% at 66 km/h at
    18:16:49 on 2019/07/07. The driver then began braking prior to the impact.
    At 18:16:53 a collision occurred on the rear side of the vehicle while the
    vehicle was traveling at 17.0 km/h. The collision event ended at 18:16:56
    when the vehicle reached a speed of 0 km/h. The driver did not continue on
    their trip after the crash event.",
  "severity": 93.52,
  "hit_direction": "rear",
  "rear_hit": 38.0,
  "front_hit": 26.0,
  "left_hit": 0.0,
  "right_hit": 35.0,
  "weather": {"observation_time": 1504364220000, "weather_text": "Sunny", "temperature": 1.2,
    "precipitation_type": null, "wind_direction_degrees": 78,
    "wind_direction_text": "NNE", "wind_speed": 24.1, "wind_gust_speed": 24.1,
    "visibility": 1.6, "is_day_time": true,}
  "driver_facing_sun": false,
  "coords": [{"lat": 37.09806568, "lng": -84.77349480000001, "time": 1562523399159.0}], ...
  "before_coords": [{"lat": 37.091731, "lng": -84.776536}, {"time": 1562523309009.0}], ...
  "after_coords": [{"lat": 37.099392, "lng": -84.772067}, {"time": 1562523416426.0}], ...
  "gps_speed": [{"x": 1562523399159.0, "y": 80.64}], ...
  "speed_before": 66.0,
  "prior_phone_use": false
  "prior_speeding": true
  "event_markers": [{"event_type": "speeding", "start_ts_millis": 1562525415687.0,
    "end_ts_millis": 1562525413059.0, "lon": -84.656536, "lat": 37.081321,
    "speed": 93.5, "duration": 2628}]
  "impact_speed": 17.0,
  "speed_after": 0.0,
  "delta_v": 66.0,
  "delta_t": 7.27,
  "start_time": 1562523409159.0,
  "main_impact_time": 1562523413059.5
  "end_time": 1562523416426.0,
  "num_impacts": 3,
  "driver_maneuver": "Braking",
  "driver_direction": "N",
  "driver_bearing": 91.4119732317368,
  "airbag_deployed": false,
  "vehicle_spin": false,
  "rollover": false,
  "continue_driving": false,
  "crash_lat": 37.099391,
  "crash_lng": -84.772046,
  "accel_lat_data": [{"x": 1562523399159.0, "y": 2.1390000000000002}], ...
  "accel_lon_data": [{"x": 1562523399159.0, "y": -1.459}], ...
  "accel_vert_data": [{"x": 1562523399159.0, "y": 10.829}], ...
  "status": "Completed",
}
```