

**ARTIFICIAL INTELLIGENCE/MACHINE LEARNING (AI/ML)  
PRIVATE PASSENGER AUTO SURVEY  
SURVEY FILING GUIDANCE AND DATA DEFINITIONS**

This document provides survey filing guidance and data definitions and is organized by each survey section. Any company licensed to write private passenger auto insurance in one of the nine participating states (Connecticut, Illinois, Iowa, Louisiana, Nevada, North Dakota, Pennsylvania, Rhode Island, Wisconsin) and has at least \$75 million in national private passenger auto insurance premium for 2020 is required to complete the survey.

**Respondent Information**

All demographic information is required. Comments are optional but are encouraged if any of your responses in any section need to be clarified.

**Definition of Artificial Intelligence/Machine Learning (AI/ML) for Survey – Applicable to All Sections**

AI/ML describes an automated process in which a system begins recognizing patterns without being specifically programmed to achieve a pre-determined result. This is different from a standard algorithm in that an algorithm is a process or set of rules executed to solve an equation or problem in a pre-determined fashion. Evolving algorithms are considered a subset of AI/ML.



**Artificial Intelligence / Machine Learning Systems include:**

- Systems that adapt and adjust to new data and experience without manual human intervention.
- Systems that arrive at results for which the outcomes and the stepwise approach toward the outcomes were not configured in advance by a human programmer.
- Systems that dynamically respond to conditions in the external environment without the specific nature of such responses being known in advance to the designers of the systems.
- Systems that utilize neural networks and/or deep-learning algorithms, such as supervised, semi-supervised, and unsupervised learning algorithms.
- Systems that engage in automatic speech recognition, facial recognition, image recognition, text recognition, natural language processing, generation of customer-specific recommendations, automated customer communications (e.g., chatbots with non-preprogrammed prompts), autonomous or semi-autonomous vehicle operation or data gathering, or any other approach that does not require either preprogramming or a manual human intervention in every instance of an action or decision.
- Systems that automatically generate adaptive responses based on interactions with a consumer or third party.
- Systems that determine which data elements to rely upon, in a non-preprogrammed fashion, among a variety of possible alternatives.



**Artificial Intelligence / Machine Learning Systems exclude:**

- Static “scorecards” that deterministically map consumer or other risk characteristics to treatments or decisions. (However, an AI/ML system may use the output of such static “scorecards” as input data for the AI/ML system to consider.)
- Systems with solely preprogrammed decision rules. (e.g., “If A, then B” applied invariably in all situations).
  - Tables of point or factor assignments in rating plans.

**ARTIFICIAL INTELLIGENCE/MACHINE LEARNING (AI/ML)  
PRIVATE PASSENGER AUTO SURVEY  
SURVEY FILING GUIDANCE AND DATA DEFINITIONS**

- Static ratemaking and/or predictive-modeling methodologies, including linear regression, generalized linear modeling (GLM), or generalized additive modeling (GAM). Purely informational static databases, such as databases used to obtain reference amounts for claim settlements, or static databases pertaining to consumer characteristics or experience, regardless of the amount of information in the database. However, if AI/ML is used to create a static predictive model, that AI/ML system is considered within the scope of this survey.
- Deterministic “phone trees” that navigate consumers through pre-recorded voice prompts.
- Any approach that an insurer could have realistically utilized in the year 2000 or prior.

**Guidance for Questions in Each Operational Area: Rating, Underwriting, Claims, Fraud Detection, Marketing, Loss Prevention**

The respondent will only need to complete the corresponding sections for which AI/ML is being used by their company as indicated on the General Section of the survey.

For purposes of this survey, the operational areas are Rating, Underwriting, Claims, Fraud Detection, Marketing, and Loss Prevention. This survey is primarily focused on consumer facing models used for these operational areas; however, the respondent can include other operational areas listed in the “Other” line (question 3) in the General Section of the survey.

Each operational area has specific “uses” listed for AI/ML. For example, “Rating Class Determination” is a “use” listed under the Rating Section. The respondent should select the highest **level of deployment** of AI/ML.

- Research: The investigation into and study of materials and sources to establish facts and reach new conclusions. The collecting of information about a particular subject.
- Proof of Concept (POC): A small exercise to test the design idea or assumption. The main purpose of developing a POC is to demonstrate the functionality and to verify a certain concept or theory can be achieved in development. It is basically testing the model for functional viability to be sure it runs and delivers a result.
- Prototype: Prototyping provides the opportunity to visualize how the product will function; it is a working interactive model of the end product that gives an idea of the design, navigation, and layout. Prototyping involves testing the model with actual data, in a limited, controlled environment. A prototype brings the POC idea to life.
- Implemented in Production: The model is being used in a live, production environment using real data.

In addition to highest level of deployment, the survey seeks information on the **level of decisions influenced** by an AI/ML model.

- Automation: No human intervention on execution.
- Augmentation: Model advises human who makes decision – model suggests answer.
- Support: Model provides information but does not suggest decision or action.

**ARTIFICIAL INTELLIGENCE/MACHINE LEARNING (AI/ML)  
PRIVATE PASSENGER AUTO SURVEY  
SURVEY FILING GUIDANCE AND DATA DEFINITIONS**

**Listing Model Names**

On each of the AI/ML operational areas, there is a question asking the respondent to list each AI/ML model used (AI/ML models only, not any GLMs). If there are no more than 10 models, the respondent is required to provide the names of the models and additional information on whether each model was developed internally or by a third party. If there are more than 10 models, the additional models should be listed but no additional information is required. If there are more than 10 models, the models with the highest level of deployment should be listed in the first 10 lines, and only the models with the lowest level of deployment should be among the models listed without the additional information requested.

If only researching the “use” of an AI/ML model for an operational area, it is understood a model may not have a name associated with it. If that is the case the respondent should answer “Not Yet Named” or “NA”.

If better information can be provided through a brief description of the model, as opposed to a model name, that is acceptable. However, if a third-party vendor has given its model a specific name, then that name should be provided.

**Model Governance Questions**

The purpose of the question related to model governance is to obtain a better understanding regarding a company’s awareness of specific risk areas tied to the NAIC Artificial Intelligence Principles. In addition, the survey seeks information to understand if guidelines and/or best practices are documented. Specifically, if the company is involved in using AI/ML models, **does the company have a documented process in place** that addresses:

- **Fairness and Ethics Considerations:** Ensuring responsible adherence to fairness and ethical considerations. It is clear there is debate regarding the definition of “fairness and ethics”, so for the purposes of this survey, and assuming a general understanding of the terms, the response should be consistent with how the company defines those terms. Generally, respect the rule of law and implement trustworthy solutions designed to benefit consumers in a manner that avoids harmful or unintended consequences including unfair or proxy discrimination.
- **Accountability for Data Algorithms' Compliance with Laws as well as Intended and Unintended Impacts:** Ensuring the data used and the algorithms/models within the scope of the AI/ML system, are delivering the intended benefit, and there are proactive processes in place to ensure there is no unacceptable unintended impact. Simply put, be responsible for the creation, implementation and impacts of any AI system.
- **Appropriate Resources and Knowledge Involved to Ensure Compliance with Laws Including those Related to Unfair Discrimination:** Ensuring the requisite and appropriate resources, skillsets and knowledge needed to ensure compliance with laws, including those related to unfair discrimination, are actively involved in these programs and decision-making – including oversight of third parties’ understanding and competence related to compliance with relevant laws and the issue of unfair discrimination.
- **Ensure Transparency with Appropriate Disclosures Including Notice to Consumers Specific to Data Being Used and Methods for Appeal and Recourse Related to Inaccurate Data:** Ensuring documented processes and best practices are in place that govern and actively address the issue

**ARTIFICIAL INTELLIGENCE/MACHINE LEARNING (AI/ML)  
PRIVATE PASSENGER AUTO SURVEY  
SURVEY FILING GUIDANCE AND DATA DEFINITIONS**

of transparency, ensuring adequate and complete/understandable consumer disclosure regarding the data being used and how the data are used, as well as providing a way for consumers to appeal or correct inaccurate data. This is intended to be specific for data not already protected by legislation such as the Fair Credit Reporting Act (FCRA), as the assumption is all companies would be compliant with that law. This pertains to consumer data NOT specified in the FCRA.

- AI Systems are Secure, Safe and Robust including Decision Traceability and Security and Privacy Risk Protections: Ensuring an appropriate governance process is in place and documented specific to the company's AI/ML activity or program that focuses on protecting security, in terms of its data and intellectual property, from potentially compromising interference or risk and relevant and necessary privacy protections are in place; and ensuring the data and the AI/ML models are sufficiently transparent and explainable so that they can be reviewed for compliance with laws and best practices and proven to not be unfairly discriminatory or used for an unethical purpose.

It is understood that governance models vary in terms of components and terms used to describe these risk areas. However, there is a common thread across most governance models, and this language was specifically used in this survey as it ties directly to NAIC's adopted AI Principles. Where there may be concerns about overlap, the intention is for this additional information to clarify the unique intent of each. The company should reply to each component as specifically as possible.

**Data Use Table Definitions**

1. Consumer or Other Type of "Score": A numeric value generated based on a combination of any underlying attributes or behaviors of the consumer, insured risk, or any items considered by the insurer to be relevant to the consumer or insured risk. Scores are computed using deterministic algorithms or models which are not themselves considered to be AI / ML systems. Inquiries in this survey regarding such scores seek to understand whether these scores are used as input data elements within AI/ML systems.
2. Criminal Convictions: Exclude auto-related convictions
3. Demographic: Age, gender, address, marital status, other non-behavioral attributes of a consumer or population attributes of an area
4. Driving Behavior: Tickets, years of driving experience, annual miles driven
5. Education: Level of education, GPA
6. Vehicle-Specific Data: Type of vehicle(s) driven or owned, history of the vehicle(s), value of contents inside the car
7. Facial Detection / Recognition / Analysis: Picture to confirm identity, estimate biological age or gender of the consumer
8. Geocoding: Latitude and longitude coordinates of a physical address
9. Natural Catastrophe Hazard: Frequency and severity of natural hazards
10. Job Stability: current employment, length of employment at prior employers, unemployment
11. Income: Annual income, income source
12. Occupation: Primary profession, service, or trade for which a person is paid
13. Personal Financial Information: Net worth, type of bank account or credit account, number of bank accounts or credit accounts, available credit, payment history data
14. Loss Experience: Claim history for Private Passenger Auto, claims from other lines of insurance
15. Medical: Medical history, medical condition, prescription data, lab data

**ARTIFICIAL INTELLIGENCE/MACHINE LEARNING (AI/ML)  
PRIVATE PASSENGER AUTO SURVEY  
SURVEY FILING GUIDANCE AND DATA DEFINITONS**

16. Online Media: Web searches, online purchases, social media activities
17. Telematics: Time-of-day driving data, location of driving data, braking data, acceleration data, maximum spend, turn speed
18. Voice Analysis: speed, pitch, volume
19. Other

**Definitions Specific to Rating**

- Rating Class Determination: Decisions regarding which insureds to place within which rating category and which criteria to use to establish a given rating category.
- Price Optimization: NAIC Casualty and Actuarial Statistical (C) Task Force white paper: [https://www.naic.org/documents/committees\\_c\\_catf\\_related\\_price\\_optimization\\_white\\_paper.pdf](https://www.naic.org/documents/committees_c_catf_related_price_optimization_white_paper.pdf)
- Retention Modeling: Estimation of the effects of a particular insurer-initiated rate change on the decisions of existing insureds to remain with the insurer.
- Numerical Relativity Determination: Decisions regarding which quantitative rating factor to assign to a particular rating category.

**Definitions Specific to Underwriting**

- Automated Approval: Approving an application without human intervention on that particular application.
- Automated Denial: Denying an application without human intervention on that particular application.
- Underwriting Tier Determination: Decisions regarding the criteria to use to establish specific named or numbered categories (called tiers) which utilize combinations of attributes that affect an insurer's underwriting decision.
- Company Placement: Decisions regarding which of several affiliated companies within an insurance group will accept an individual risk.
- Input into Non-Automated Approval Decision: Providing data, analysis, or recommendations regarding a decision to approve an application in a situation where a human decision-maker still has the ability and responsibility to affirmatively consider this information and make a decision independently of the AI/ML system. In this situation, the AI/ML system cannot automatically approve the application, and protocols exist that ensure that each recommendation from the AI/ML system is actively reviewed and not adopted by default.
- Input into Non-Automated Denial Decision: Providing data, analysis, or recommendations regarding a decision to deny an application in a situation where a human decision-maker still has the ability and responsibility to affirmatively consider this information and make a decision independently of the AI/ML system. In this situation, the AI/ML system cannot automatically deny the application, and protocols exist that ensure that each recommendation from the AI/ML system is actively reviewed and not adopted by default.
- Automate Processing Thru the Agency Channel: Enabling agencies to receive certain information about applicants automatically without specifically requesting that information and/or to provide quotes to the applicants and/or recommend a decision regarding the application to the agent without being based on preprogrammed decision rules.

**ARTIFICIAL INTELLIGENCE/MACHINE LEARNING (AI/ML)  
PRIVATE PASSENGER AUTO SURVEY  
SURVEY FILING GUIDANCE AND DATA DEFINITIONS**

**Definitions Specific to Claims**

- Claim Approval: Approving a claim without human intervention on that particular claim.
- Claim Denial: Denying a claim without human intervention on that particular claim.
- Determine Settlement Amount: Recommending which amount to offer to a claimant in order to resolve the insurer's obligations on the claim.
- Claim Assignment Decisions: Recommending which adjusters are assigned to which claims.
- Informational Resource for Adjusters: Providing facts, data, and analysis to claim adjusters without recommending a decision or limiting the adjusters' authority over handling the claim.
- Evaluation of Images of the Loss: Analysis of photographic, video, or other visual evidence pertaining to a potentially insured loss in order to extract facts relevant to an insurer's decision and/or provide guidance and recommendations based on the information obtained in this manner.

**Definitions Specific to Fraud Detection**

- Fast Tracking of Likely Non-Fraudulent Claims: For claims that are identified to be at a low risk of fraud, establishing a rapid process for approving and paying those claims without further scrutiny or follow-up with the claimant.
- Referral of Claims for Further Investigation: For claims that are identified to be at a higher risk of fraud or other potential issues that affect the legitimacy of those claims, determining that those claims should be assigned to investigators for a more intensive and human-driven review process.
- Detect Medical Provider Fraud: Identification of claims where medical providers may have submitted inappropriate or questionable amounts for reimbursement.
- Detect First-Party Liability: Identification of potential situations where a first-party insured may have been at fault for a claim and/or may have misrepresented information to the insurer.
- Detect Third-Party Liability: Identification of potential situations where a third-party claimant may have been at fault for a claim and/or may have misrepresented information to the insurer.

**Definitions Specific to Marketing**

- Targeted Online Advertising: Determination of which individuals on the Internet should receive or see advertisements from the insurer.
- Identification of Recipients of Mail or Phone Advertising: Determination of which individuals would be desirable recipients of an insurer's advertisements via the telephone or physical mail.
- Provision of Offers to Existing Customers: Determination of which customers should be notified of new insurance products, discounts, options to be written in a different book of business, or any other benefit or favorable treatment that the insurer seeks to extend.
- Identification of Potential Customer Groups: Determination regarding which consumer sub-populations could become additional likely customers of the insurer and/or benefit from the insurer's products and services.
- Demand Modeling: Identification of consumers' needs for and interest in specific types of insurance and insurance products that the insurer is offering or whose development or sale the insurer may be considering or exploring.
- Direct Online Sales: Selling insurance policies to consumers through a direct Internet-based channel in a manner that does not rely solely on preprogrammed decision rules.

**ARTIFICIAL INTELLIGENCE/MACHINE LEARNING (AI/ML)  
PRIVATE PASSENGER AUTO SURVEY  
SURVEY FILING GUIDANCE AND DATA DEFINITONS**

**Definitions Specific to Loss Prevention**

- **Identification of High-Risk Customers:** The goal of such identification in a loss-prevention context is not to make an underwriting or rating decision, but rather to recognize which specific customers may benefit most from loss-prevention advice and mitigation techniques that the insurer may be able to provide, thereby reducing such customers' frequency and/or severity of losses. For example, an AI/ML system might determine that certain households with youthful drivers are more likely to benefit from risk-mitigation advice and other approaches.
- **Risk-Mitigation Advice to Consumers:** AI/ML systems might be used to target messaging to consumers based on specific risks identified for a given policy. For example, in a household with youthful drivers, AI/ML-targeted messaging and incentives could focus on ways those drivers could gain experience in a low-risk manner and drive more carefully in day-to-day context. For households in mountainous areas, AI/ML systems could provide targeted advice about safe driving in rugged terrain.
- **Determination of Advance Payments:** In many situations, small payments issued at or shortly after the time of loss, prior to the full adjustment of the claim, can help the insured or third-party claimant prevent much larger amounts of damage that would otherwise greatly raise the costs of the claim for the insurer. In a private passenger automobile context, examples could include, but are not limited to, (i) making a payment for minor repairs that restore the vehicle to a drivable condition, whereas the insured and/or insurer would have otherwise needed to spend much more money to rent another vehicle or to pay for storage of a non-functional vehicle; (ii) making a payment for prompt, inexpensive medical treatment of a claimant, which could prevent the emergence of a longer-term, chronic, and much more costly health condition; or (iii) making a payment for expenses related to towing an insured's or claimant's vehicle away from the scene of the accident and reasonable costs of storage for the vehicle until the insurer or vehicle owner are able to gain possession of the vehicle. In the absence of such prompt payments, vehicles at towing-company storage yards may accumulate significant charges for which the insurer may ultimately become responsible.