A Blueprint for an Open Insurance Standard

OPIN INSURANCE DATA STANDARD

Motor Insurance Use Case

Working Document and Request for Comment

January 2021

Supplementary Document

This working paper should be read in conjunction with the OPIN Insurance Data Standard file.

CONTENT

Contributors

A note of appreciation goes to the group of contributors that helped advance this project. They combine expertise honed at insurance companies, open banking and InsurTech startups.

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1   INTRODUCTION

With the publication of this working document the Open Insurance (OPIN) community aims to engage with and harness expertise in developing the **open API blueprint for the insurance industry.**

The purpose of an open API standard for insurance is ultimately to level the playing field for all actors in the insurance market. Today the insurance industry is mostly a closed ecosystem. This prevents innovation, collaboration and competition.

Crowdsourcing and co-creation is the most defining aspect of the OPIN community and a departure from the norms the insurance market has been accustomed to for more than two centuries.

The blueprint will be the result of the combined efforts of experts from across the insurance value chain and we encourage everyone to get involved in this work.

Since the introduction of the Open Insurance whitepaper, we have been able to selectively onboard almost 150 companies from a variety of domains and industries. Members of the community include insurance carriers, InsurTech startups, consultants and software vendors from around the world. We are grateful to many of those members for making introductions, undertaking many hours of discussions, and their constant input.

The OPIN community will produce a standard that is agnostic of technology, trust and identity providers making it feasible for all actors in the insurance industry to adopt and at the same time meet the needs of API consumers and end customers.

As a global blueprint, the localization of the standard to conform to local laws and regulations will become the domain of the local OPIN Working Groups. Notwithstanding, EU and UK laws and regulations were considered in the design of the data standard.

The focus of the document and its supplement is on developing a data standard for the Motor insurance class of business as a use case. By initially focusing only on the motor insurance class of business, it is hoped that time-to-market for the standard is accelerated. This also improves learning and a better feedback loop.

This document does not cover:

1. Logical or physical data models.
2. Open API specification.
3. Security, identity standards or authentication management.

2   BLUEPRINT OVERVIEW

The blueprint will be composed of two key components, a data standard and an open API specification. However, the blueprint will be developed in two distinct phases.

2.1   Phase one: OPIN Data Standard

The concept of open insurance revolves around enabling policyholders to share data with their chosen third-party service provider after going through an authentication and authorization process.

An ecosystem of insurers, reinsurers, intermediaries, loss adjusters, forensic accountants, salvage specialists, repairers and a myriad of InsurTech developers will interact in **new ways redefining industry best practices and the boundaries of service design**.

New market players including digital banks and FinTech will use APIs to embed into their services cutting edge insurance solutions feeding innovations in the financial markets and **extending the open finance evolution**.

A data standard is a contract declaring the data required to satisfactorily consume and/or publish an API. It declares the information types needed to successfully adopt an Open Insurance API standard (see Phase two).

Failure to satisfy the data contract will render the API unable to offer open insurance in accordance with the OPIN standard.

All information types are published according to a well-formed contract that is technology agnostic and declared in a data schema that follows the OPIN Data Standard.

The open data standard supports ethical use of data and corresponding trust context needed for it to be applied correctly, enhances openness and transparency and facilitates open finance.

The data Standard and its schema will be incremental in nature. Iterations and version changes will be released to continually improve subsequent versions.

The OPIN data standard is intended to satisfy a number of business models, however others may also apply:

- C2B - Direct Customer to Business for direct insurance
- B2B - for joint ventures, partnerships and consolidation initiatives
- Intermediated insurance - brokers as an example
- Aggregation markets and platforms

Partners' demands for openness and insurers' need to maintain a competitive advantage must strike a balance. Consequently, in addressing this phase, a set of elements have acted as the guardrails in developing the data standard:

- A sufficient depth and breadth of datasets to induce the widest variety of business partnerships.
- Provisioning the highest quality of data. This means definitions must be precise and in well understood business terms reducing the need for human interpretation.
- Catering for and considering nuances of new business models. The growing popularity of on-demand insurance solutions such as PAYD and PHYD business models are such examples.
- Developing the standard in phases to allow insurance incumbents to advance core systems, improve their agility and enhance collaboration with the widest array of partners.

Regulatory constraints are becoming more complex. This requires careful consideration of privacy rights enforced by GDPR, IDD, CCPA and other regulations in defining personal data types, processing activities and purposes.

Two recent events have added to this complexity, notably, the UK's exit from the EU and the European Court of Justice ruling to overturn Decision 2016/1250 on the adequacy of the protection provided by the so-called EU-US "Privacy Shield".

As soon as the data standard for a substantial number of lines of business has been completed (see The Roadmap section), work will begin on phase two.

2.2   Phase two: OPIN API Standard

An OPIN API Standard is an interface which allows access to the data schema of the OPIN Data Standard and is to be accessible and consumed by all *parties* in a consistent interface that exhibits the data standard in a uniform way. A *party* being an insurer, direct customer, intermediary or indeed a device interacting with the API standard (for example, a telematics device or a mobile phone application). The API is to declare access to the open insurance Data Standard and declares version compatibility and conformance to the API Standard.

An API Standard will provide a definition of a secure interface and network protocols by which the Data Standard is consumed, and includes:

- Secure access and verification.
- Auditable and monitored.
- Available and accessible.
- Versioned according to the supported OPIN standard published.

Great attention will be given to how best to **incentivize the broadest group of participants** in the ecosystem, with special focus on risk carriers, an approach in stark contrast to that of Open Banking where compliance came first and commercial incentives came later.

The community would wish to ensure that premium (for-a-fee) APIs are incorporated from the start alongside free-to-use open APIs. This additional capability could provide greater functionality and **accelerate the maturity of the ecosystem**. They are also needed to **diversify the potential API publishers as well as the API consumers** that OPIN is aiming to attract to the ecosystem.

API monetization opportunities may include:

- Authorized insurance entity license validity checking.
- Elements of the driver profile.
- Open data analytics.
- Data on fraud and cyber hacking attempts.

Comprehensive information on the functions, technical specification, service level agreement, assessment of potential risks, regulatory barriers etc. of the proposed open API standard will be developed as the initiative transitions from the first phase as was previously mentioned.

2.3 Open Insurance Domain Model

A Domain model is a conceptual model that describes the data (Data Standard) and behavior (API standard), of the domain (insurance) in one model. The Domain model provides the context to the standard and the areas of relationship across both the Data Standard and API Standard.

The Domain model helps by providing additional context on the full standard but also clarifies areas of dependency, referential integrity and in areas applicable, a business process if required to adopt in a logical sequential preferred manner where necessary.

A domain model reflecting the Data Schema domain boundary is illustrated below and shows the API standard and the Data standard reflected together in one model.

The Domain will iterate and evolve as a domain extends or becomes adopted, other domains may be considered in addition, or also be applicable and reusable in new or consolidated scenarios.

Open Insurance Domain Model
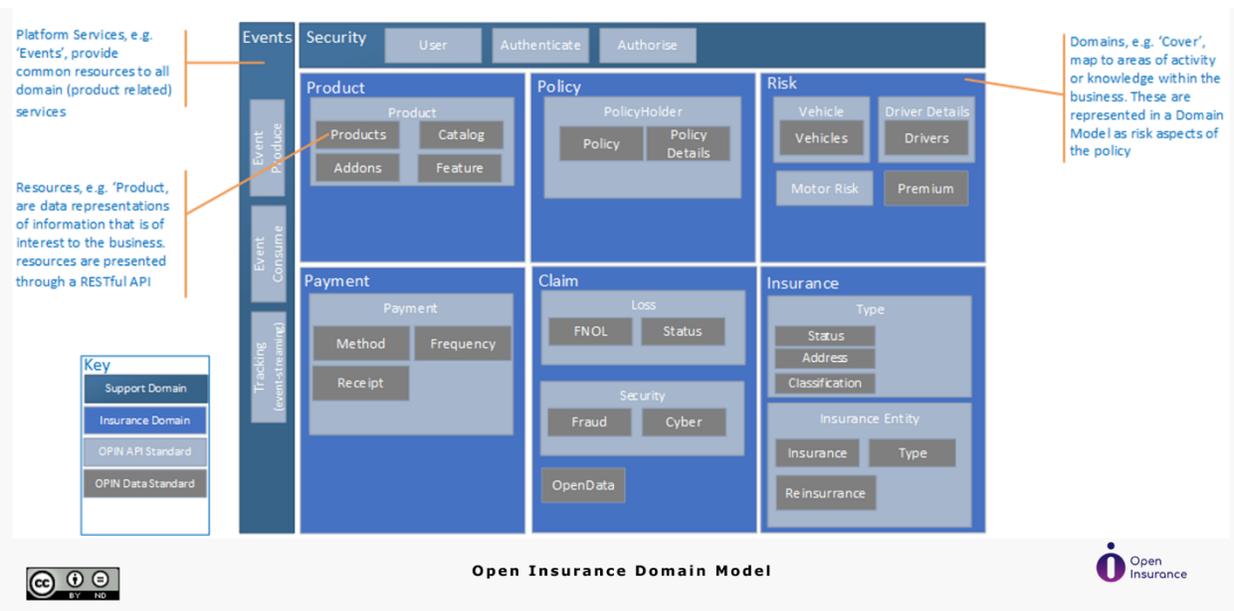
The domain model has 6 insurance domains and 2 supporting domains. The Insurance domain is bounded by its context of an API standard and a Data standard, these are:

- Product domain
- Policy domain
- Cover domain
- Payment domain
- Claim domain
- Insurance domain

The Security support domain is included to support the security context recommended to adopt the standard, and the Event support domain indicates standards can be consumed as both a consumer and/or publisher of a Data Standard, as events occurring through the lifecycle of insurance.

This paper clarifies the areas of the data and API standard.

3   THE APPROACH IN DEVELOPING THE BLUEPRINT

3.1   The main audience

The OPIN project will be of interest to many stakeholders, however, the parties with most to gain are the authorized risk carriers and intermediaries.

Consumers, both individuals and businesses, consumer protection agencies, software developers, loss adjusters, actuaries and regulators would have an important role to play. Participation is extended to include as wide an audience as possible to add weight and balance. They are encouraged to seize this opportunity and contribute to the project.

Approach to standard development
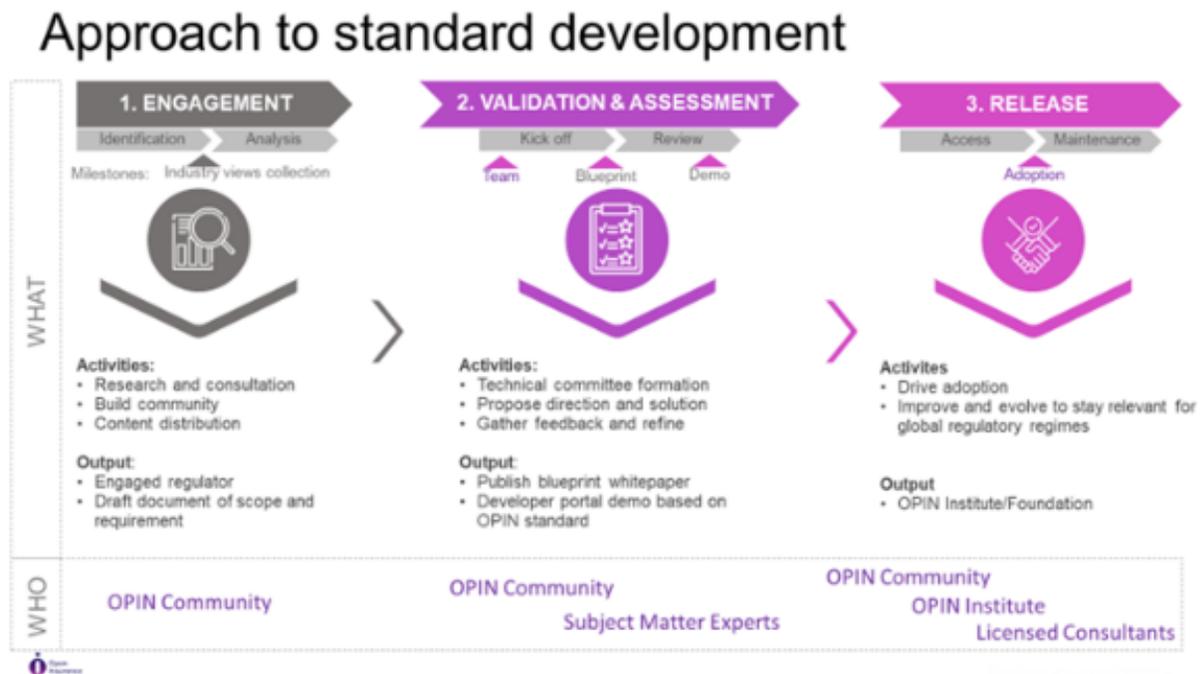
3.2   Innovate and encourage experimentation

We're moving through exciting crossroads in facilitating interoperability across the insurance ecosystem and as an initiative we need to remain relevant by adopting innovation conducive solutions.

One important feature that we should be mindful of is making all of our output available in machine readable format.

If resources do not allow for this, then output must be written in simple, stripped down and well structured manner for easy transformation to machine readable format. This includes data standard, API documentation, instructions and rules.

3.2.1 Improve data exchange formats

One such example is the increasing usage of the WHAT3WORDS service in recording addresses of customers. Their API includes three methods. One allows for the conversion of latitude and longitude coordinates to 3 words address. The second allows for 3 words addresses to be converted to coordinates. The last method is an auto suggestion method which can correct or complete a 3 words address that is faulty.

The WHAT3WORDS service has been included in the data standard.

3.2.2 DeFi and insurance

Consideration has been made for decentralized blockchain networks, dApps and tools. Blockchain technology is increasingly explored in the design of smart insurance contracts, risk pooling and credit default swaps. We are also seeing an increasing number of insurers developing products that protect against loss of funds at crypto exchanges.

Similarly, crypto currencies and tokens have been included in the data standard as potential methods for premium payments as well as in claims settlement.

3.2.3 Insurance prediction markets

Though real-world practical use cases have been minimal and are still largely experimental, prediction markets are an interesting product from an insurance perspective and deserve support.

The fact that prediction markets may emerge as specialist entities has been recognized.

4   THE OPIN DATA STANDARD

As this document considers only the motor insurance class, it has included almost the **full scope of data** involved in a full policy lifecycle to allow for deeper discussions by the community. The OPIN community needs to assess the extent of data that would give consumers the most insight.

A data standard is a high level representation of a data model and what table fields will be present. At its essence it presents a common language for API designers.

Please familiarize yourself with the proposed Insurance Data standard file before continuing.

4.1   What does "full scope of data" mean?

It basically means:

- All information and data that the policyholder provided in submitting an application for insurance.
- Insurance policy coverage details.
- Data on policy changes and transactions.
- Claims information, images and accident reports.
- Reinsurance data related to motor insurance bordereaux.

4.2   Constraints and impact assessment resulting from shared data

Consideration must also be given to the following:

- Uphold information rights of data subjects.

- Ensure compatibility with the regulatory and legal landscapes of EU and UK in particular in view of the large contingent of community members from those regions.

- Processing of special category data may require a DPIA (Data Protection Impact Assessment). Risk carriers may have to perform this exercise to identify and minimize risks to individuals emanating from combining, comparing or matching data from multiple sources, automated decision-making, tracking individuals' online or offline location or behaviour, extensive profiling and scoring, processing of sensitive personal data including genetic and biometric data, processing at a large scale, processing of data on vulnerable data subjects, use of innovative technological solutions or processing that involves preventing data subjects from exercising a right or using a service or contract.

4.3   Refinements to the data standard

The data standard will go through feedback loops:

- The first working document will be prepared by the OPIN community.
- The document will be published on the OPIN website inviting wider input. A refined version will follow.
- The data standard for the remaining classes of business will be prepared according to the roadmap.
- The aforementioned process will be repeated towards producing a data standard that combines all classes of business.

4.4   Assumptions

API consumers should expect and safely assume:

- No misrepresentation in data provided.

- Data provided relies on the definitions presented herein and in the correct context.

- Source data. Data should not be altered in a way to put the API consumer at a disadvantage and the data controller at an advantage.

The data standard has been segmented into distinctive core parts and attention was given to maintaining **consistency in terminology.**

To emphasize consistency, data properties exclude properties that represent calculated data. For example, data on loss ratios or earned/unearned premium will not be considered for inclusion. Third parties should receive (factual) data normally represented in policy wordings, policy schedules, endorsements, receipts etc.The objective is to avoid as much as possible misrepresentation and misinterpretation.

4.5   Required minimum set of data

Data elements were marked as *required* or *not required*, to ensure a uniform level of expectation across OPIN-adopting companies. Data marked as *required* are not the result of any mandate or compliance to disclose duty.

4.6   Naming conventions

Contributors to the standard must adhere to the following:

- Use common business terminology in describing data elements.

- Maintain consistency in naming properties and making definitions across all classes of business.
- Make use of widely used open standards where applicable.
- Data standard will be as far as possible technology agnostic and vendor neutral.

A variety of existing standards were utilized including those of [The International Organization for Standardization (ISO)](#) and [Schema.org](#).

4.7 Data schema

There are **twelve core data properties** in the [Insurance Data standard](#). They are:

1. **Insurance Entity**
2. **Personal**
3. **Commercial**
4. **Product**
5. **Coverage**
6. **Driver**
7. **Vehicle**
8. **Beneficiary**
9. **Receipt**
10. **Claim**
11. **Premium Bordereau**
12. **Claims Bordereau**

Core properties are defined as follows:

4.7.1 Insurance Entity

Provides information on authorized and regulated legal entities. There are different types of authorized entities ranging from reinsurance companies to brokers.

This type of data will be treated as open data in terms of accessibility and makes it possible to develop a directory of authorized and regulated entities and their product catalogues.

4.7.2 Personal
Represents KYC information on the policyholder acting in personal capacity.

4.7.3 Commercial

Represents KYC information on business and corporate insurance buyers.

4.7.4 Product

Information on the contract, product type and relevant business model, wording and payment methods.

4.7.5 Coverage

Data relating to terms and conditions of coverage, insurance policy validity, sum insured, no claims years, premium rates and more.

4.7.6 Driver

Information relating to vehicle user/s, primary and permitted driver, including medical conditions, conviction history and basic driving patterns.

4.7.7 Vehicle

Includes a comprehensive set of data for vehicle/s identification, make, value, alterations and security.

4.7.8 Beneficiary

Information on any designated beneficiary entitled to receive all or a portion of claim payout.

4.7.9 Receipt

Provides data related to credit and debit transactions in administering an insurance policy.

4.7.10 Claim

Provides data relating to first notification of loss (FNOL) and subsequent updates upto closing of the claim file.

4.7.11 Premium Bordereau

Includes data relevant to the motor insurance premium bordereaux. Information would be retrieved on a per insurance policy basis. Accounting period not included as it would depend on the (agreed) date of data retrieval (accounting period).

4.7.12 Claims Bordereau

Includes data relevant to the motor insurance claims bordereaux. Information would be retrieved on a per insurance policy basis. Accounting period not included as it would depend on the (agreed) date of data retrieval (accounting period).

Reinsurance bordereaux were included in developing the use case to advance discussions on the way the data could be handled and accessed using open APIs.

5   ADDING THE FUTURE INTO THE EQUATION

In developing its standards, OPIN will consider trends developing in other ecosystems and their implications on the insurance industry. That is an approach to future proof its standards from becoming quickly obsolete.

Trends in mobility are pointing towards wider adoption of Mobility-as-a-Service, public autonomous transport and holistic approaches to travel requiring integration with myriads of open platforms and data.

5.1   Subscription based vehicles

Car sharing has taken many different forms. A trend that is gaining traction involves vehicle manufacturers catering to customers more open to sharing than outright ownership. For a fixed monthly fee, items such as insurance, maintenance and taxes are usually included in a monthly plan. The business model has produced mixed results. For some carmakers it has provided a good revenue source while others have had to scrap it after a couple of years in trial.

A classification has been included in the data standard to incorporate this trend.

5.2   Consideration for intelligent mobility

AI assisted vehicles are already on trials on our roads. Risk carriers have begun to address the risks and liabilities associated with autonomous technologies and offer solutions across multiple insurance classes.

A classification has been included in the data standard to incorporate this trend.

5.3   Real time solutions

Insurance products and services receiving data from onboard sensors, installed dongles, and paired mobile devices enable instant and accurate data consumption. Among other things, this is an aspect that enhances the consumption of claims APIs, therefore the data scope of the suggested standard must accommodate assessment, reserving and parametrically-driven instant payment data.

A contract type has been included in the data standard to incorporate these technologies.

6   THE ROADMAP

A product specific approach is used in progressing the development of the data standard.

Conventionally, lines of business are divided as follows:

Lines of Business

Personal Lines

Motor

Travel

Health

Household

Protection

Pet

Commercial lines

Property

Business interruption

Motor

Pecuniary (fidelity guarantee, credit and legal expenses)

Life Insurance

Term

Endowment

Whole of life

Liability

Directors' and officers'

Employers

Products

Professional indemnity

Public liability

Marine

Hull and machinery

Cargo

Liability

Loss of hire

Risk sharing

Reinsurance

OPIN will proceed in developing standards for personal as well as commercial lines at the same time. Other lines will follow in the same order as they appear in the list above.

Progress through completing the work required for each line of business will depend on the number of community participants involved.

7   WHO SHOULD JOIN THIS EFFORT?

The blueprint will be the result of the combined efforts of subject matter experts setting the future direction of open interfaces and data sharing. **It will cement the rules for communicating. These are the protocols, the formats, the security, and access control.**

The emerging standard will influence the exchange of data and services between players from different industries at a global scale.

Barriers to interoperability with other ecosystems will be redrawn. Marketplaces and platforms will rely on an in-the-public-domain standard for efficiently integrating modular InsurTech components.

The standard will influence a new regulatory approach. Smarter regulation will necessitate engagement with many stakeholders. Important tradeoffs may have to be made to balance consumers' freedom of choice and competition promotion with the need for privacy, and innovation.

Therefore, work on the blueprint will be of interest to:

- Reinsurers, insurers and intermediaries
- Regulatory authorities and policymakers
- Motor insurance bureaus supporting victims of uninsured, untraceable driver or foreign registered vehicles
- Third party administrators
- Insurance technology innovators (InsurTech startups)
- Banks and payment services
- End customers both individuals and businesses
- Technology consultants and other parties with an interest in insurance interoperability

8   NEXT ACTION

OPIN seeks to refine and gain broad agreement on the data standard to induce convergence in views before setting out to design the insurance open API standard.

All feedback received will be evaluated and shared with the community to facilitate wider collaboration.

The community must also play its role in soliciting feedback, ideas and raise awareness towards gaining wider knowledge of the OPIN standard.

This is a tremendous opportunity for the industry to be involved in shaping the next iteration of the standard delivering on a vision of a flourishing interoperable insurance market.

Please send us your comments and views by email to connect@openinsurance.io

DISCLAIMER

We are sharing information on this work and the roadmap to outline the Open Insurance Initiative's (OPIN) plans for the open API standard. All information provided in this document and supplements are provided for INFORMATIONAL PURPOSES ONLY, is general in nature, and is not intended to and should not be relied upon or construed as a binding commitment. OPIN makes no guarantees of any kind regarding the information herein.

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GLOSSARY

OPIN Open Insurance Initiative

OPIN standard Collective term for data and open API standards providing third party service providers read and write access

Blueprint In-the-public-domain document setting OPIN data and API standards for global users

Working Document Document requiring input by OPIN community members, external experts and stakeholders

PAYD Pay As You Drive

PHYD Pay How You Drive

GDPR General Data Protection Regulation

IDD Insurance Distribution Directive

CCPA California Consumer Privacy Act

KYC Know your customer

REFERENCES

EDPS Guidelines on the concepts of controller, processor and joint controllership under Regulation (EU) 2018/1725

Guidelines on Data Protection Impact Assessment (DPIA) and determining whether processing is "likely to result in a high risk" for the purposes of Regulation 2016/679

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We provide thought leadership on key issues that define interoperability and compatibility. We believe that designing for inter-connectedness will help insurance providers climb up the network chain towards ecosystem actualization.

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