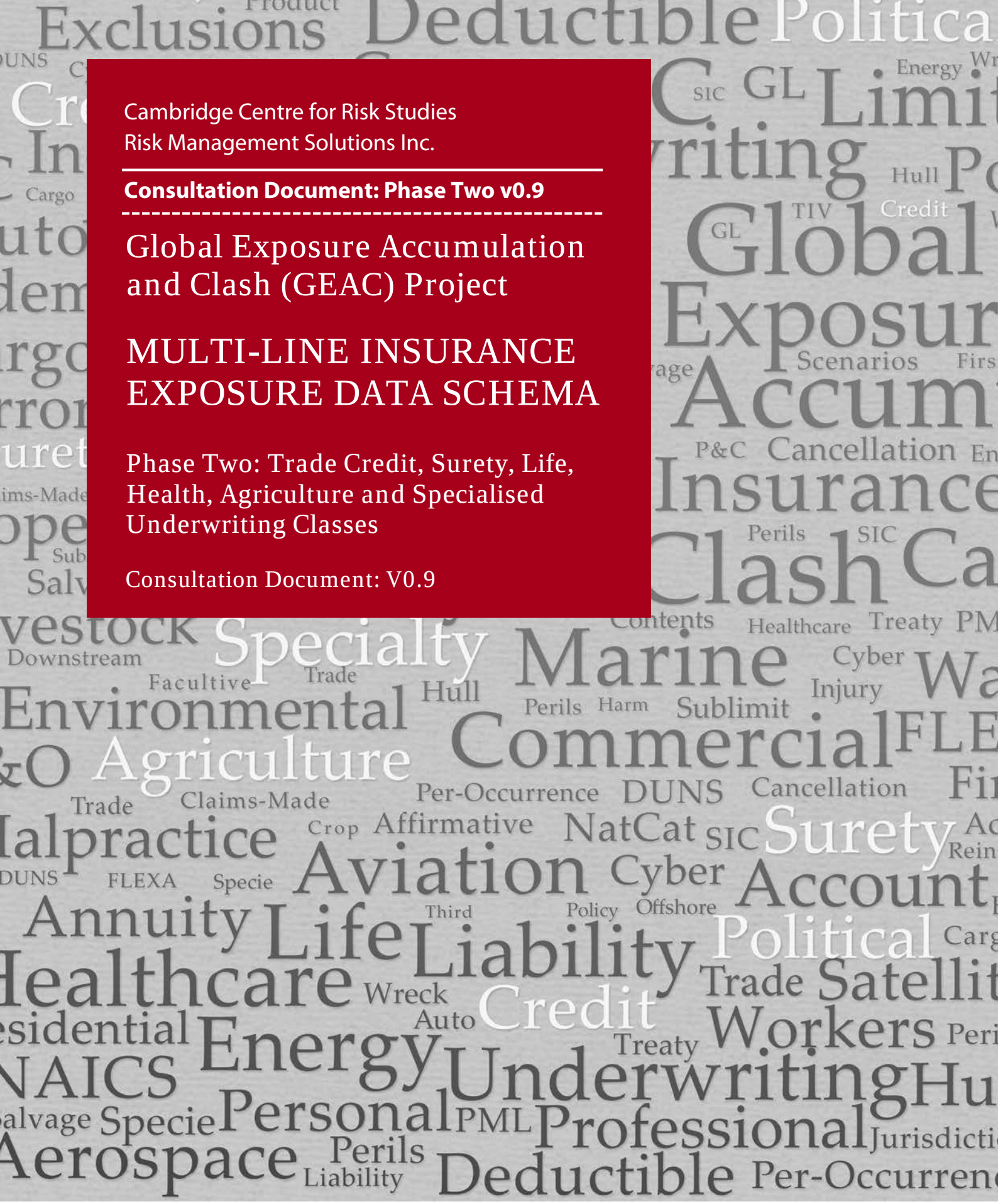

Centre for **Risk Studies**

UNIVERSITY OF CAMBRIDGE
Judge Business School

RMS®

Multi-Line Insurance Exposure Data Schema: Phase Two

Consultation Document v0.9

Contents

Part A: Overview and Progress

1. A Standardised Multi-Line Insurance Exposure Data Schema

Cambridge Centre for Risk Studies (CCRS) and Risk Management Solutions (RMS) are coordinating the development of a data schema to capture insured exposure in the main lines of insurance business.

1.1. Aims and Objectives

The project will develop an open source multi-line data schema to capture the most significant lines of insurance across all geographical markets. The data standard will be agnostic to the platform on which it is implemented.

The proposed schema will provide a standard minimum set of exposure data fields that will enable insurance industry participants, both insurers and reinsurers, to:

a) Provide a more comprehensive and standardised framework for monitoring and reporting exposure enterprise-wide and function as a system of record, for risk managers, brokers, consultants, and analysts;

b) Improve interchanges of data between market players to refine transferring of risk to reinsurers and other risk partners, reporting to regulators, and exchanging information for risk co-share, delegated authority, and bordereau activities;

c) Apply accumulation risk model scenarios for classes of business that currently have less well-developed models available for them;

d) Support clash model analysis for scenarios that impact multiple lines of insurance;

e) Enable a new generation of models and risk analytics as well as expand the scope of potential risk management applications.

The schema will aid in the development of a more unified industry through increasing the capability for dialogue and cross communication.

2. Version 0.9 Document

This document requests feedback on the structure and dictionaries of a proposed exposure data schema for the Phase Two classes of insurance business:

2.1 Trade Credit
2.2 Surety
2.3 Life
2.4 Health
2.5 Agriculture
2.6 Specialised Underwriting Classes

This is the fifth consultation document and proposes a version 0.9 structure of the Phase Two classes of insurance for the exposure data schema. Through this document, we intend to solicit feedback from the insurance community and continue the dialogue in the schema's ongoing development and validation. We have connected with subject matter experts over the past several months to further develop and expand the phase two schema discussed here.

We are grateful for your feedback and recommendations, and ask that completed consultation documents be submitted to Kayla Strong (k.strong@jbs.cam.ac.uk) by April 20th, 2018.

The schema structure for Phase Two classes of insurance starts on page 9 of this document.

3. Consultation Document Process

Version 0.1: Principles and Prioritisation

The first stage of the project involved setting out the key principles and prioritisation of the classes of business for development of the schema. The Version 0.1 consultation document, available for download here, describes the objectives of the project, provides an overview of current market practice, reviews the wide range of existing and proprietary data schemas for different classes of insurance that are currently available and how a data schema can incorporate existing standards and current practice, and proposes a set of principles to be observed when designing the schema.

The V0.1 round of consultation is now closed and we greatly appreciate the feedback that we received and gratefully acknowledge the time and contributions from the various companies and individuals who worked with us to refine the objectives. We also thank those who attended the workshops and participated in telephone interviews.

We incorporated the views and feedback from the V0.1 consultation into the planning, phasing, and structure of the proposed data schema.

Version 0.5: Outline Structure and Key Components

Version 0.5 of the proposed data schema provided an outline structure for each class of business and defines the main categories of exposure data for each class of insurance. We defined these as 'dictionaries' – lists of categories that can be applied to accounts to describe and classify pertinent information for accumulation purposes. In Version 0.5 we sought to identify all the dictionaries required, but did not attempt to define all the content of each of these dictionaries – i.e. the fields and categorisation, lists of asset types, or attributes of the exposures and coverages. This work is completed in version 0.9. We have completed V0.5 for the Phase 2 schema earlier this year, and have incorporated the feedback into this V0.9 report.

Version 0.9 Detailed Structure

Version 0.9 uses the data structure agreed after the Version 0.5 consultation to propose the detailed content of a minimum data requirement specification for that class. This involves identifying for the contents of each dictionary in the schema for that class of insurance: i.e. a full listing of all the categories of sub-types of insurance, coverages, insured assets, and their attributes. This document is the V0.9 detailed structure for the Phase 2 classes of insurance.

Version 1.0 Complete Schema

The feedback from the consultation of version 0.9 is consolidated into a final consensus and published as a Version 1.0 complete minimum data standard for each class of insurance.

Version 1.0 consists of complete listings of field values, reference tables, and definitions.

We expect there to be future versions of the schema for each class of insurance business, Versions 2 and beyond, that could add greater detail and granularity, evolve or extend the schema. At present, however, we propose to develop a minimum data requirement for exposure monitoring and accumulation risk management across many classes of insurance. We prioritise breadth (i.e. developing a standard and unified view across multiple classes of insurance business) over depth (i.e. the level of detail required to capture a particular class of insurance).

4. Phasing of the Schema Development

The development of the exposure data schema is proceeding in phases:

Phase One

1.1 Casualty Liability
1.2 Marine

1.3 Energy
1.4 Aviation

Phase Two

2.1 Trade Credit
2.2 Surety
2.3 Life
2.4 Health
2.5 Agriculture
2.6 Specialised Underwriting Classes

Phase Three

3.1 Political & Security Risk
3.2 Annuities and Pensions
3.3 Personal Accident
3.4 Auto Insurance

4.1. Classes of Insurance with Existing Data Schemas

Data schemas already exist for other classes of insurance that are in use and widely adopted. A complete data schema for all classes of insurance will include these existing exposure types. These schemas will not be further refined or published as part of this project, but we recommend using existing current practice for:

- Commercial Property
- Residential Property
- Homeowner Property
- Cyber Insurance
- Workers Compensation

5. Principles

The following principles, agreed during the V0.1 consultation and afterwards, have guided the development of this exposure data schema. They are described in further detail in the V0.1, available here.

1) Exposure and accumulation focus
2) As simple as possible
3) Make the schema hierarchical and extensible
4) Asset descriptions combined with insurance coverage
5) Make the data schema compatible with other standards as far as possible

6. Structure of Exposure Data Schemas

The schema proposes a set of information that can be applied to an individual policy. A policy is an insurance contract with an insured, either an organisation or an individual. An insured may represent an ‘account’ to an insurance practitioner, and an account may consist of several policies, possibly in different classes of insurance.

A policy may have additional schedules attached to it, such as lists of the assets or risk objects (such as people or products) that are being insured under that policy. The schema proposes a minimum set of attributes for each of the assets or risk objects on the schedule.

The schema for each class of business includes of a number of ‘dictionaries’, or lists of defined categories that can be applied to account holder, policy, asset or risk object details to describe and classify information about them for accumulation purposes. These dictionaries are defined in the schema structures for each class of insurance.

6.1. Information about the Insured (Account Holder)

The account holder is identified and categorised with other high-level information that is relevant to exposure management, such as the types of the activities and operations of the account holder.

The information about the insured is standard across all classes of insurance.

For some classes of insurance, such as casualty liability, the characteristics of the insured organisation are the key determinants of the exposure, so in these classes there is a more extensive set of information required on the attributes of the insured.

6.2. Policy Contractual and Financial Structure

Contract information about the policy is captured, including financial structure, dates of coverage inception and expiration, and the legal jurisdiction in which claims or disputes are settled.

The policy-level financial structure requires information on policy total limit, deductible, co-share and attachment point.

Information on total limit is essential for exposure management. Financial structures for insurance policies can be complex. The data schema provides the capability for defining financial terms in addition to a policy total limit, deductible, co-share and attachment point to any grouping and permutations of individual items on asset types, asset attributes, or locations.

6.3. Type of Insurance

[Dictionary List]

Each policy is characterised by the type of insurance business within the class of insurance, sometimes referred to as a “line” of insurance business, although the term “line” is sometimes applied to the whole class of insurance. Insurance type is provided as a standardised list of categories, as a dictionary (i.e. a list of agreed types) for each class of insurance. Insurance type is the accepted segmentation of the market into the range of insurance products offered to cover particular sets of assets and insurance needs with appropriate coverages. These products are often written using common contractual templates that are typically modified and customised for specific client needs. The potential for the schema to identify the contractual template used is discussed below.

6.4. Insurance Coverage Type

For each type of insurance, the schema identifies the coverage type which would be applied, for example: physical damage, third party liability, business interruption, etc. There can be multiple types of coverages which can be applied to one type of insurance. In these cases, an individual record will be recorded for each coverage type. For example, within Marine classes of insurance, ports and terminals insurance provides both property damage cover and business interruption cover. Another example is Commercial General Liability (CGL) which has three coverages: bodily injury and property damage liability, personal and advertising injury liability, and medical payments cover. We would list each of these separately within the schema. These are listed in the same table as the type of insurance within this consultation document, to facilitate discussion on their appropriate association to individual sub-types of insurance.

6.5. Schedule of Insured Assets

The policy can include one or more schedules of assets (‘risk objects’) being insured under this policy. A schedule is a listing of individual assets. In some cases, only the largest assets will be individually listed on a schedule with all other unlisted assets covered in aggregate under the policy total. The more that individual assets can be specified, the more exposure can be managed with accuracy and confidence. The schema supports the market practice of having assets being described both as schedules of individual assets and aggregate cover for unlisted assets.

For each item in the schedule, the schema provides the capability to assign the following information.

6.5.1. Type of Asset

[Dictionary List - Specific to Class of Insurance or Type of Insurance]

A categorisation of the individual asset on the schedule from an agreed list of types. The proposed schema dictionary provides a hierarchical system of categorising the assets typically covered in the insurance type. We try to limit the dictionary to a maximum of 10 categories in the highest level of categorisation, with each of these categories potentially able to be further divided into 10 sub-categories. For the schema Version 1.0 we propose to keep this categorisation as simple as possible and to limit the categorisation to a maximum of these 100 subdivisions wherever possible, only using a third layer of categorisation of type of asset where absolutely necessary.

6.5.2. Attribute of Asset

[Dictionary List - Specific to a Particular Type of Asset]

Each type of asset has a relevant listing of one or more standard attributes that have major exposure implications, and for which exposure managers might want to analyse and review their portfolio of insured assets. We try to limit the number of attributes for each type of asset to a maximum of 10.

Attributes can be numerical metrics, open or free text fields, or descriptive categories. Where an attribute is a descriptive field, we provide an agreed dictionary list of the options for the description categories. For Version 1.0 we propose to limit the number of categories to a maximum of 10 categories in the highest level of categorisation, with the potential to further divide each category of asset attribute into 10 sub-categories in future versions of the schema.

6.5.3. Location of Asset

For individual assets that are in fixed locations, the physical location is a key attribute in determining its exposure to geospatial hazards and assists in exposure accumulation analysis and modelling of geographical perils. The schema captures the latitude and longitude coordinate of the geographical centroid of the asset, together with an assessment of the precision of that locator. The exposure data schema encourages the capture of geographical location information with as high accuracy as possible, using geocoding to the best precision available. Where geocoding is derived from address interpretation, for example knowing that the asset is located within a specific administrative region, the centroid of the administrative region can be used. This location will be independent of the insured's location, which will be captured within the "Information about the Insured" Dictionary (Table 1). These dual locations support the exposure modelling of assets while also preserving the insured's legal jurisdiction.

6.6. Inclusions and Exclusions

The schema provides an ability to include a full depiction of the causes of loss that are included in the coverage and excluded from it, as a schedule of inclusions and exclusions. Market practice is either the provision of All Risks coverage, sometimes accompanied by exclusion clauses for certain causes of loss (and write-backs where exclusions are reinstated), or the provision of Named Peril coverage, with an explicit contractual listing of specific causes of loss that are covered. There will be space provided within the schema were both the inclusions and exclusions can be listed, if needed.

Each type of insurance is often written using common contractual templates that are typically modified and customised for specific client needs. Different contractual templates are across the market, typically with US and European markets using different wording structures. We will provide a space where these wordings can be listed, referencing the insurer's specific amendments as needed.

Examples of contractual wording templates include:

- LMA 3030 (Terrorism Insurance Physical Loss or Physical Damage Wording)
- CL380 (Institute Cyber Attack Exclusion Clause)

- LMA5287 (Property & Plant Testing & Commissioning Clause)
- LMA5203 (Limited Nuclear Risk Exclusion Clause)
- NMA 464 (War and Civil War Exclusions Clause)

Part B: Schema Structure for Phase Two Classes of Business

This section describes the outline structure and key components of the exposure data schema for the following classes of insurance business:

- Trade Credit
- Surety
- Life
- Health
- Agriculture
- Specialised Underwriting Classes

Please review and comment on the proposed structure and where possible, propose content for the various dictionaries required.

7. Information about the Insured (Account Holder)

Information about the insured will be collected at a primary level, which various policies and lines of insurance can reference. The information is desirable but not essential and will be filled in as available. Additional user defined fields are available to account for specific organisational requirements.

Table 1: Information about the insured

a) Name (Common)	
b) Full Legal Name	
c) Organisation Identifier Coding Information (DUNS Number)	
d) Unique identified (Insurance Organisation Specific)	
e) Size of company: Annual revenue	
f) Size of company: Total number of employees	
g) Size of company: Total Payroll	
h) Size of company: Annual Turnover	
i) Activity/Business Sector of Company, NAICS Code	i. 2012 Code
	ii. 2017 Code
j) Insurance Aggregation Business Sectors[1]	
k) Location	i. Street Address
	ii. City
	iii. State/County/Province
	iv. Country
	v. Zip/Postal Code
	vi. Longitude and Latitude or Location Well Known Text
	vii. Legal Jurisdiction
l) Currency Units	i. Currency Date
m) Credit Rating (or schedule of credit ratings)	

[1] Insurance Aggregation Business Sector refers to the broad industry sector the insured fits best. This was initially developed during the Centre for Risk Studies Cyber Schema, and has proven a valuable reference for aggregation calculations.

A) Please comment on the proposed information about the insured, outlined above.

8. Policy Level Exposure Capture

The schema proposes a set of information that will be applied to each individual policy. A policy is an insurance contract with an insured. For commercial lines, the insured is an organisation. An insured may represent an 'account' to an insurance practitioner, and an account may consist of several policies.

The following information is proposed for each policy. The information is desirable but not essential, and will be filled in as available. Additional user defined fields are available to account for organisational specific requirements.

Table 2: Information about the policy

a) Policy Number			
b) Office			
c) Division			
d) Insurance Product Name			
e) Class of Insurance			
f) Currency	i.	Currency Date	
g) Claims Occurrence[2]	i.	Claims Made	
	ii.	Occurrence	
	iii.	Occurrence Notified	
h) Claims Trigger Pathway[3]	i.	Causation	
	ii.	Opening of a Construction Site	
	iii.	Manifestation	
i) Civil legal liability exposure[4]			
j) Policy Financial Structure	i.	Total Insured Value	
	ii.	Policy Co-share Percent	
	iii.	Policy Attachment Point	
	iv.	Policy Self Insured Retention (SIR)	
	v.	Policy Deductible	
	vi.	Total Policy Limit	
	vii.	Aggregate Limit	
	viii.	Policy Exposure (calculated field based on values above)	
	ix.	Payment Term	1. Maximum Credit Period

[2] Claims occurrence refers to how the claim is launched or recognized. This is particularly important for liability coverage, which has different policies specific to each type of claim occurrence.

[3] Claims Trigger pathway refers to how the claim occurs. This is particularly important for Trade Credit, which requires this level of detail for underwriting and risk aggregation.

[4] For liability policies we want to capture the legal exposure of the policy which is a collection of various civil tort claims like wrongful act, breach of duty; wrongful act, error and omission; misstatement; breach of confidentiality, etc.

		2. Maximum Extension Period
		3. Stop Shipment Period
k) Currency Units		
l) Inception Date		
m) Expiration Date		
n) Retroactive Date		
o) Cedent Name[5]		
p) Location	i. Street Address	
	ii. City	
	iii. State/County/Province	
	iv. Country	
	v. Postal Code	
q) Named Peril(s)		
r) Inclusions Listing	i. LMA Wording	
	ii. Peril Listing	
s) Exclusions Listing	i. LMA Wording	
	ii. Peril Listing	
t) Terms and conditions		
u) Blanket coverage details	*(text field)*	

B) Please comment on the proposed information about the policy, outlined above.

[5] Only where applicable.

9. Trade Credit

Trade credit insurance is a form of business insurance which provides coverage against the risk of not being paid for goods or services sold by the insured. This non-payment can be due to either commercial or political risks. Trade credit is applicable to all sizes of businesses and is seen internationally in the business community. In addition to providing financial insurance, trade credit insurance can also provide risk management services through various market monitoring initiatives. Trade credit operates differently than some of the other forms of insurance seen within the project, due to the various actors involved. As a result, trade credit has a variation of the structure described in the introduction.

9.1. Information about the Insured (Account Holder)

When considering the insured, or account holder of the policy, insurers and reinsurers may have varying information about them. This will continue to be recorded in the primary/general section, described in part (A). We recognise that not all fields can be filled, but suggest to simply fill as much as available.

9.2. Information about the Counterparty (Buyer, Obligor)

The counterparty is the buyer in the trade credit relationship, and requires similar details as the insured, with some small adjustments. We propose the information needed is captured within Table 1 with the following additional details. This table will apply for each obligor under each policy.

Table 3: Additional required information about the counterparty

a) Limit Granted	
b) Payment Term (Duration in Days)	i. Maximum Credit Period
	ii. Maximum Extension Period
	iii. Stop Shipment Period

C) Please comment on the proposed information about the counterparty. Is there information which should be added or removed?

9.3. Types of Credit Insurance

[Dictionary: Trade Credit – Types of Insurance]

A suggested listing of primary types of trade credit insurance commonly offered within the insurance market is:

Table 4: Trade credit insurance types

Insurance Type
a) Single Buyer
b) Multi-Buyer
c) Export
d) Multi-National
e) Political Risk
f) Excess of Loss
g) Receivable Management (Subcontracting)
h) Payable Insurance

i)	Ground up/Whole Turnover

D) Please comment on the listed types of trade credit insurance. Are there types of trade credit insurance which should be added or removed?

9.4. Trade Credit Asset Types

[Dictionary: Trade Credit – Asset Types]

Within trade credit insurance, the insurable asset is trade receivable or trade payable between the obligor/buyer and the insured/supplier. This is listed below.

Table 5: Trade credit asset types

Asset Type	
a)	Trade Receivables
b)	Trade Payables

E) Please comment on the asset types covered by trade credit insurance. Are their additional asset types which should be included?

9.5. Trade Credit Asset Attributes

[Dictionary: Trade Credit – Asset Attributes]

We suggest the following information is required pertaining to the receivable.

Table 6: Trade credit asset attributes

Asset Attributes		
a)	Contract Expiration	
b)	Total Insured Value	
c)	Total Insured Receivables	
d)	Term (Days)	
e)	Average Days of Sales Outstanding	
f)	Maximum Credit Period (Payment terms)	
g)	Provisions	i. 180 Days Overdue
		ii. 360 Days Overdue

F) Please comment on the asset attributes proposed for accounts receivable. What additional information is required?

10. Surety

Surety (or Surety Bonds) are a unique category within the insurance industry, as they are not a form of insurance but a bond, handled within the insurance market. The insurer acts as a surety to guarantee the obligee (the recipient of an obligation) that the principal (the primary party who will perform the task) can complete the task as agreed within the contract. Surety bonds remove a degree of uncertainty and risk within commercial financial contracts. The construction and maintenance sectors tend to buy surety bonds instead of professional liability insurance and the bonds are called 'contract surety bonds'.

Surety operates differently than insurance, with different actors, partnerships, and structures. As a result, surety has a variation of the structure described in the introduction.

10.1. Information about Contractor (also known as Principal/Obligor)

Surety bonds require information about the contractor, or principal whose work is being guaranteed. We propose the information needed is captured within Table 1.

10.2. Surety Bond Types

[Dictionary: Surety – Types of Surety Bonds]

A suggested listing of surety bonds commonly offered within the insurance market is:

Table 7: Surety bond types

Bond Type	Bond Sub Type	
a) Construction (also called contract surety bond)	i. Bid Bond	
	ii. Performance Bond	
	iii. Payment Bond	
	iv. Advance Payment Bond	
	v. Maintenance Bond	
b) Private/Public Projects		
c) Tax Bonds/ Revenue Bond/ Municipal Revenue Bond	i. Airport revenue bonds	
	ii. Industrial revenue bonds	
	iii. Public power revenue bonds	
	iv. Hospital revenue bonds	
	v. Housing revenue bonds	
	vi. Student loan revenue bonds	
	vii. Transit revenue bonds	
	viii. Water revenue bonds	
	ix. Highway revenue bonds	
	x. Toll road bonds	
	xi. College and university revenue bonds	
	xii. Double-barrelled bonds	
d) Judicial Bonds	i. Defendant Bonds	1. Bail Bonds
		2. Appeal Bonds
		3. Counter-Replevin Bonds
		4. Release of Lien Bonds

	ii. Plaintiff Bonds	1. Attachment Bonds
		2. Claims and Delivery Bonds
		3. Indemnity to Sheriff Bonds
		4. Injunction Bonds
		5. Replevin Bonds
e) Financial Guarantee		
f) Mortgage		

G) Please comment on the types of surety bonds. Are there additional types that should be considered?

10.3. Surety Bond Attributes

[Dictionary: Surety – Bond Attribute]

There are three primary dynamic factors which play into a bond agreement. These can be broadly categorised as (1) the principal, (2) the principal's task, and (3) the obligee. The principal's information is collected initially within the schema (see Table 1). Principal's task attributes are outlined in Table 8. Obligee attributes are outlined in Table 9.

Not all listed asset attributes will be relevant to all assets. We advise to enter what is applicable and available.

Table 8: Principal's task attributes

Attributes	Sub Attributes
a) Duration (Days)	
b) Projected Completion Date	
c) Total Value	
d) Total Insured Value	
e) Contact Personnel	
f) Bond Value	
g) Location of project	i. Street Address
	ii. City
	iii. State/County/Province
	iv. Country
	v. Postal Code
h) Project name	
i) Project type	

Table 9: Proposed obligee attributes

Attributes	Sub Attributes

a) Name (Common)		
b) Full Legal Name		
c) Organisation Identifier Coding Information		
d) Unique identified (Insurance Organisation Specific)		
e) Size of company: Annual revenue		
f) Size of company: Total number of employees		
g) Activity/Business Sector of Company, NAICS Code	i.	2012 Code
	ii.	2017 Code
	iii.	Parent Organisation
h) Insurance Aggregation Business Sectors		
i) Location	i.	Street Address
	ii.	City
	iii.	State/County/Province
	iv.	Country
	v.	Postal Code
j) Credit Rating[6]		

H) Please comment on the proposed surety bond attributes. Are there additional attributes which should be considered?

[6] There will be the opportunity to hold multiple credit ratings, which will not be limited to one value.

11. Life

Life insurance is protection against financial loss which would result following the insured's death. The named beneficiary receives a pay-out following the death or critical illness in exchange for the premium payments made by the insured. There are vast geographical differences within the life insurance market, largely dependent on penetration and commonality. Within this schema, we aim to keep the design broad enough to be accepted internationally. Country specific additions are encouraged.

11.1. Types of Life Insurance Coverage

[Dictionary: Life – Types of Life Insurance Coverage]

A suggested listing of primary and secondary level types of life insurance commonly offered is:

Table 10: Types of life insurance coverage

Type of Insurance	Sub Type of Insurance	Sub Type of Insurance (1)	Sub Type of Insurance (2)	Sub Type of Insurance (3)
a) Life	i. Personal/ Individual	1. Term		a) Mortality
				b) Standalone Critical Illness (CI)
				c) Accelerated Critical Illness (CI)
				d) Additional Critical Illness (CI)
		2. Permanent	a) Whole Life	a) Mortality
				b) Standalone Critical Illness (CI)
				c) Accelerated Critical Illness (CI)
				d) Additional Critical Illness (CI)
			b) Universal	
			c) Variable	
	ii. Group	1. Term		

I) Please comment on the proposed types of life insurance. Are there additional types which should be considered?

11.2. Attributes Collected About the Insured

[Dictionary: Life – Insured Attributes]

The following list of attributes may be collected about the insured, specific to life insurance type.

Table 11: Personal/Individual life attributes

Attribute	Sub Attribute	Sub Attribute (1)	Sub Attribute (2)
a) Gender			
b) Date of Birth			

c) Age			
d) Address	i. Postal Code/Zip Code		
e) Profession/Occupation			
f) Socioeconomic band			
g) Consumer classification[7]			
h) Policy Type	i. Single		
	ii. Joint 1st Death		
	iii. Joint 2nd Death		
i) Benefit type			
j) Currency			
k) Sum Assured Amount			
l) Health Rating Class (also called Underwriting Classes)	i. Medically Underwritten	1. Standard	
		2. Rated	A. Addition to Persons Age
			B. Multiplier to Mortality Rate
			C. Addition to Qx
	ii. Preferred Insurance Rating	1. Tobacco	
		2. Non-Tobacco	
		3. Standard	
		4. Preferred	
		5. Super Preferred	
m) Distribution Channel	i. IFA		
	ii. Tide Agent		
	iii. Direct Marketing		
	iv. Bank Assurance		
	v. Online		
	vi. Other		

Table 12: Group life attributes

Attribute	Sub Attribute	Sub Attribute (1)	Sub Attribute (2)
a) Gender			
b) Date of Birth			
c) Age			
d) Employer Name			

[7] We are currently researching various consumer classification systems, and continuing to investigate how this can be reflected within the schema. We recognize that may of the classification systems are country specific (i.e. CACI ACRON and Experian's Mosaic), but are interested if there is a cross national standard which is internationally recognized. We hope to receive additional feedback regarding this topic prior to the V1.0 release.

e) Sum Assured Amount			
f) Health Rating Class (also called Underwriting Classes)			
	i. Medically Underwritten	1. Standard	
		2. Rated	A. Addition to Age
			B. Multiplier to Mortality Rate
			C. Add to Qx
	ii. Preferred Insurance Rating	1. Tobacco	
		2. Non-Tobacco	
		3. Standard	
		4. Preferred	
		5. Super Preferred	
g) Workplace address	i. Street Address		
	ii. City		
	iii. State/County/Province		
	iv. Country		
	v. Postal Code		
h) Occupation			
i) Occupation Category			

J) Please comment on the proposed attributes collected about the insured. Is there information which should be added or changed?

11.3. Locations, Jurisdictions, and Geographical Area of Operation

[Dictionary: Life – Fixed Locations]

When considering the location, jurisdictions and geographical area of operation, we propose that the insured's personal address is used as a default where available. When considering group policies, we propose the use of the employer's (or issuing party's) address. We suggest capturing the address of the insured party's employer as well as the address of the account holder on the policy, as these might differ.

K) Please comment on how life policy locations are considered. Is there a common alternative to employer's address or issuing party's address being used as a location indicator?

11.4. Named critical illnesses

[Dictionary: Life – Named Critical Illnesses]

When considering the named critical illnesses, we imagine a policy will explicitly name the illnesses included or excluded in the coverage such as cancer, multiple sclerosis or Parkinson's disease. We understand that

individual insurers use their own discretion when selecting which illnesses to included or exclude, but we are still interested in capturing a comprehensive list.

L) Please comment on how critical illnesses are defined in policy language. Is there a common list of critical illnesses that is used when designing a policy?

12. Health

Health insurance is insurance taken out to cover the cost of medical care and expenses during the insured's life. There are vast geographical differences within the health insurance market, largely dependent on the role of the government in the coverage process. Within this schema, we aim to keep the design broad enough to be accepted internationally. Country specific additions are encouraged.

12.1. Types of Health Insurance Coverage

[Dictionary: Health – Types of Health Insurance Coverage]

We propose to categorise each policy by the common types of insurance in the market. The dictionary will consist of primary categories which can be sub-divided into secondary categories where appropriate (and third levels of categories if essential).

A suggested listing of primary and secondary level types of life and health insurance commonly offered is:

Table 13: Types of health insurance

Types of Insurance	Sub Types of Insurance
a) Health	i. Individual
	ii. Group
b) Accident	i. Accidental Death and Dismemberment (AD&D)
	ii. Long Term Disability
	iii. Travel
	iv. Hospital Cover

M) Please comment on the proposed types of health and accident insurance. Are there additional types which should be considered?

12.2. Types of Health Insurance Policies

[Dictionary: Health – Types of Health Insurance Policies]

We understand that there are various types of health insurance policies, specific to country and region. To date, we have a proposed mapping of United States, South American, and South East Asian health insurance policies. We understand that in South America and Southeast Asia this type of insurance is called medical expense insurance. We are interested in further expanding this policy listing, and welcome additional policy listings from the global network.

Table 14: Proposed types of United States health insurance policies[8]

Primary Policy Type	Sub Policy Type	Account Type
a) Managed Care (CCP)	i. Exclusive Provider Organisation (EPO)	

[8] We have several additional questions related to the United States Healthcare system, and would value further conversations relating to this. Specifically, we are interested in where dental insurance would be captured within the schema. If you are willing to provide further details regarding the subject, please make note in the comments section. Thank you.

	ii. Health Maintenance Organisation (HMO)	
	iii. Preferred Provider Organisation (PPO)	
	iv. Point of Service (POS)	
b) Consumer-driven health care	i. Flexible Spending Account (FSA)	
	ii. Health Reimbursement Account	
	iii. Health Savings Account (HSA)	1. High Deductible Health Plan (HDHP)
		2. Medical Saving Account (MSA)
	iv. Private Fee for Service (PFFS)	

Table 15: Proposed types of UK, South American and South East Asian Health insurance policies

Primary Policy Type	Sub Policy Type	Sub Policy Type (1)
a) Individual	i. Inpatient	
	i. Outpatient	
	ii. Transportation	
	iii. Prescription	
	iv. Miscellaneous	1. Dental
		2. Optical
		3. Wellness
b) Group	i. Inpatient	
	i. Outpatient	
	ii. Transportation	
	iii. Prescription	
	iv. Miscellaneous	1. Dental
		2. Optical
		3. Wellness

In health insurance, we have found that the concept of coverages can also be referenced to as benefits. For example, a policy will coverage prescriptions, but the coverage may be called prescription benefits. We have also found that the concept of a deductible can also be called a co-pay or excess.

N) Please comment on the use of health insurance policies within insurance exposure calculations. What level of detail is typically reflected within your records? Is there a similar list for other national healthcare policies?

12.3. Attributes Collected About the Insured

[Dictionary: Health – Insured Attributes]

We propose the following attributes to be collected about the insured, summarized in Table 16: Individual Health Attributes. A preliminary listing of broad pre-existing conditions is listed within the schema. We would value additional feedback on this listing prior to our V1.0 release.

Table 16: Individual health attributes

Attribute	Sub Attribute
a) Gender	
b) Date of Birth	
c) Age	
d) Height	
e) Weight	
f) Address	
g) Sum Assured Amount	
h) Health Rating Class	i. Tobacco
	ii. Non-Tobacco
	iii. Standard
	iv. Preferred
	v. Super Preferred
i) Medical history	
j) Pre-existing/Chronic Conditions	(See Table 17)

Table 17: Pre-existing conditions schedule[9]

Common Illness Exclusion
a) AIDS/HIV
b) Alcohol or drug abuse with recent treatment
c) Alzheimer's/dementia
d) Anorexia
e) Arthritis
f) Bulimia
g) Cancer
h) Cerebral palsy
i) Congestive heart failure
j) Coronary artery/heart disease, bypass surgery
k) Crohn's disease
l) Diabetes
m) Epilepsy
n) Haemophilia
o) Hepatitis

[9] We understand that each insurer will use their own discretion to determine which pre-existing conditions to include or exclude on a given policy, and that this can be influence by their company policies, government or regional regulations. Source of list: Adamczyk, Alicia. 2017. "Pre-Existing Conditions: What Counts in Health Care Bill?" *Time Money*, May 4, 2017. http://time.com/money/4763609/pre-existing-conditions-ahca/.

p)	Kidney disease, renal failure
q)	Lupus
r)	Mental disorders (including Anxiety, Bipolar Disorder, Depression, Obsessive Compulsive Disorder, Schizophrenia)
s)	Multiple sclerosis
t)	Muscular dystrophy
u)	Obesity
v)	Organ transplant
w)	Paraplegia
x)	Paralysis
y)	Parkinson's disease
z)	Pending surgery or hospitalization
aa)	Pneumocystic pneumonia
bb)	Pregnancy or expectant parent (includes men)
cc)	Sleep apnoea
dd)	Stroke
ee)	Transsexualism

O) Please comment on the proposed attributes collected about the insured. Is there information which should be added or changed? What information is captured for group plans?

12.4. Locations, Jurisdictions, and Geographical Area of Operation

[Dictionary: Health – Fixed Locations]

When considering the location, jurisdictions and geographical area of operation, we propose that the insured's personal address is used as a default where available. When considering group policies, we propose the use of the employer's (or issuing party's) address. We suggest capturing the address of the insured party's employer as well as the address of the account holder on the policy, as these might differ.

P) Please comment on how life and health policy locations are considered. Is there a common alternative to employer's address or issuing party's address being used as a location indicator?

13. Agriculture Insurance

Agriculture insurance provides coverage for farming and agricultural activities and assets. A large category of the insurance cover relates to crop insurance, which protects clients from loss of crops (crop yield insurance) or loss of revenue (crop revenue insurance). Other areas of coverage include livestock, forestry and aquaculture.

13.1. Types of Insurance and Coverages within Agriculture

[Dictionary: Agriculture – Types of Insurance]

We propose to categorise each agriculture insurance policy by the common types of agricultural insurance in the market. The dictionary of types of agriculture insurance consists of primary categories which can be sub-divided into secondary categories where appropriate (and third levels of categories if essential). The coverage available for the type of insurance is listed on the far-right column.

Table 18: Types of insurance within agriculture

Types of Insurance	Type of Insurance Sub Type 1	Type of Insurance Sub Type 2	Type of Insurance Sub Type 3	Coverage
a) Crop Insurance	i. Indemnity Based Crop Insurance	1. Multi Peril Crop Insurance (MPCI)		Yield Loss
		2. Named Peril Crop Insurance		Yield Loss
	ii. Index Based Crop Insurance (IBI)	1. Area Yield Index Insurance		Index Based Loss
		2. Weather Index Insurance		Index Based Loss
		3. Satellite Based Imagery	a) Normalised difference vegetation index (NDVI)	Index Based Loss
			b) Reflectants	Index Based Loss
			c) Foliage Cover	Index Based Loss
	iii. Crop Revenue Insurance (CRI)			Yield and Price Loss
b) Livestock Insurance	i. Livestock Mortality Insurance			Clean Up
				Death
				Governmental Slaughter (Stamping-Out)
				Incidental Business Interruption
	ii. Epidemic Diseases			Clean Up
				Death
	iii. Transport Insurance			Property Damage

c) Blood Stock Insurance[10]				Property Damage
d) Aquaculture Insurance	i. Stock Insurance			Stock Coverage
e) Forestry Insurance	i. Forestry Fire Index Insurance			Property Damage
	ii. Vinery Insurance			Property Damage
				Business Interruption
f) Greenhouse Insurance[11]				Property Damage
g) Farm property	i. Farm Dwellings, Appurtenant Structure and Household Personal Property			Coverage A – Dwelling
				Coverage B – Structures Appurtenant to Dwellings
				Coverage C – Household Personal Property
				Coverage D – Loss of Use
	ii. Farm Personal Property			Coverage E – Scheduled Farm Personal Property
				Coverage F – Unscheduled Farm Personal Property
	iii. Barns			Coverage G – Outbuildings and Other Farm structures

Q) Please comment on the proposed types of agriculture insurance and their associated coverages, outlined above.

13.2. Asset Types Covered by Agriculture Insurance

[Dictionary: Agriculture – Asset Types]

We propose asset types within agriculture can be classified in the following categories:

Table 19: Asset types within agriculture

Asset Type	Asset Sub Type	Asset Sub Type (1)
	i. Cereals	

[10] Predominantly British and American specific coverage.
[11] Coverage predominantly China specific

a) Crops[12]	ii.	Vegetables and Melons	
	iii.	Tree Fruits and Nuts	
	iv.	Oilseed crops and oleaginous fruits	
	v.	Root/tuber	
	vi.	Stimulant, spice and aromatic crops	
	vii.	Leguminous crops	
	viii.	Sugar crops	
	ix.	Other crops	
	x.	Forage	
b) Livestock[13]	i.	Bovine	1. Cows
	ii.	Bovine	2. Calves
	iii.	Bovine	3. Feeder
	iv.	Bovine	4. Fed
	v.	Bovine	5. Dairy
	vi.	Sheep/ Goats	
	vii.	Swine/ Pig	1. Weiner
			2. Grower
			3. Finisher
	viii.	Equines	
	ix.	Camels and Camelids	
	x.	Poultry	1. Breeders
			2. Chicks
			3. Broilers
			4. Layers
	xi.	Other Animals	
	xii.	Insects and Worms	1. Bees
			2. Silkworms
			3. Others
c) Marine/ Aquaculture[14]	i.	Freshwater Fishes	
	ii.	Diadromous Fishes	
	iii.	Marine Fishes	

[12] We have referred to the Food and Agriculture Organization of the United Nations' Indicative Crop Classification for the Agricultural Census (ICC) for our categories of crops. Please see the full documentation for more details on their initiative and their complete crop listing classification {World Programme for the Census of Agriculture 2020. Volume I: Programme, concepts and definitions, FAO, Rome 2015, Annex 4, page 162.}

[13] We have referred to the Food and Agriculture Organization of the United Nations' Livestock Classification for the Agricultural Census (ICC) for our categories of livestock. Please see the full documentation for more details on their initiative and their complete crop listing classification {World Programme for the Census of Agriculture 2020. Volume I: Programme, concepts and definitions, FAO, Rome 2015, Annex 4, page 178.}

[14] We have referred to the International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP) for the sub classification of aquatic animals and plants. The nomenclature has been developed by the Food and Agriculture Organization of the United Nations' to classify commercial species into nine divisions. Their documentation further categorizes these divisions into 50 groups, which could be referenced if further detail was required. The classification can be found here: Food and Agriculture Organization of the United Nations. 2018. "The Current International Standard Statistical Classification Of Aquatic Animals And Plants (ISSCAAP) In Use From 2000". http://www.fao.org/tempref/FI/DOCUMENT/cwp/handbook/annex/AnnexS2listISSCAAP2000.pdf.

	iv.	Crustaceans	
	v.	Molluscs	
	vi.	Wales, Seals and Other Aquatic Mammals	
	vii.	Miscellaneous Aquatic Animals	
	viii.	Miscellaneous Aquatic Animal Product	1. Sponges
			2. Pearls and Shells
			3. Corals
	ix.	Aquatic Plants (Seaweed)	
d) Forest	i.	Timber	
	ii.	Shrubbery	
e) Property	i.	Farm	
	ii.	Greenhouse	

R) Please comment on the proposed asset types covered by agriculture insurance.

13.3. Agriculture Asset Attributes

[Schedule: Agriculture – Asset Attributes]

For each of these asset types there are related attributes or details which need to be collected. These are listed for each of the primary asset types

Not all listed asset attributes will be relevant to all assets. We advise entering what is applicable and available to the insured.

Table 20: Proposed agriculture asset attributes

Asset Type		**Asset Attributes**	**Asset Attributes (1)**
a) Crops		Number of Planted Acres	
		Number of Mature Trees	
		Name of Crop	
		Crop Specie	
		Total Insured Value	
		Crop Protection in Place	
		Crop Year	
b) Livestock		Number of Head	
		Livestock Specie	
		Market Value	
		Total Insured Value	
	b.1) Additional Information for Specified Animals	Livestock Specie	
		Date of Birth	
		Date of Purchase	
		Name/ID Number	

		Sex	
		Insured Value	
		Cash Price Paid	
		Use	
c) Marine/ Aquaculture		Marine Specie	
		Size	Number of Head
			Number of Tons
		Stock Fluctuation (Annual)	
		Specie's Average Size	
		Specie's Maximum Size	
		Stock Density	lbs/acre
			kg/hectare
		Total Insured Value	
d) Forest		Number of Planted Trees	
		Number of Planted Blocks	
		Number of Planted Acres	
		Maximum Number Harvested	
		Predominant Species	
		Average Age of Trees/Shrub (Years)	
e) Farm Property[15]		Farm equipment	
		Number of outbuildings	
		Number of other farm structures	

S) Please comment on the proposed asset attributes outlined. We are actively looking to increase our asset attributes schedule, and would appreciate feedback on agricultural asset attributes typically collected within your organisation.

13.4. Fixed Locations, Jurisdictions, and Geographical Area of Operation

[Dictionary: Agriculture – Fixed Locations, Jurisdictions, and Geographical Area of Operation]

Fixed assets, such as farms or equipment, can be individually located by latitude and longitude coordinates or a geospatial object to provide geo-referencing for risk analysis and exposure management. When considering index based crop insurance, the associated area boundaries can be added as an additional geospatial object.

When considering mobile assets, such as livestock or aquaculture, location can be selected by the operational centre's location, or the location of the asset manager.

T) Please comment if you feel this is sufficient. Is there anything else we need to consider?

[15] We have not listed out all the fields you would capture about a farm property as many of them will overlap with the well defined property schemas already in place.

14. Specialised Underwriting Classes (Specialty Insurance)

The specialty market is a broad term that varies significantly across different insurance organisations. The term typically refers to insurance lines that require a “specialist” to underwrite and continue to adapt to the increasingly diverse market. After speaking with various industry stakeholders, we recognised that most specialty insurance types of insurance (such as agriculture, aviation, marine or energy) are represented amongst other schemas within this project. Due to the distribution of the speciality lines, we propose to redesign this section as a “Specialised underwriting classes”, and design it as a default option for lines which do not fit elsewhere within the schema. Examples of these lines may include satellite coverage, event cancellation, or contingency coverages. Lines stipulated in this section will be user defined and are likely to include policies which are specific to that organisation.

Considering this outlook, the schema will provide the structure to be filled, but the dictionaries will not be populated. The schema will not be applicable to industry wide schemas or discussions, but can be added when considering internal exposure.

14.1. Types of Specialised Underwriting Classes

[Dictionary: Specialised Underwriting Classes – Types of Insurance]

This dictionary will include the type of insurance, or the name which would be used when describing the policy sort. Broad categories will be listed, and can be further categorised into a subsection and a sub-subsection. To ensure simplicity is preserved, we encourage keeping only two layers of categorisations where possible. An example of the structure is outlined below. A coverage will be identified for each type of insurance, listed on the far-right table.

Table 21: Types of specialty insurance

Insurance Type	Sub Insurance Type	Sub Insurance Type (1)	Coverage Type
a. Insurance Type A	i. Sub Insurance Type A.1		Coverage
	ii. Sub Insurance Type A.2		Coverage
	iii. Sub Insurance Type A.3	Further Sub Insurance Type A.3.a	Coverage
b. Insurance Type B	i. Sub Insurance Type B.1		Coverage
c. Insurance Type C			Coverage

14.2. Asset Types Covered by Specialised Underwriting Classes

[Dictionary: Specialised Underwriting Classes – Asset Types]

This dictionary will include the asset or risk object types covered by the Specialised underwriting class, or the risk objects the policy applies to. Broad categories will be listed, and can be further categorised into a subsection and a sub-subsection. To ensure simplicity is preserved, we encourage keeping only two layers of categorisations where possible. An example of the structure is outlined below. There are general location and people schedules that are used by multiple classes of businesses and could be used for this class as well.

Table 22: Specialty asset types

Asset Type	Sub Asset Type	Sub Asset Type (1)
a. Asset A	i. Sub Asset A.1	

	ii. Sub Asset A.2	
	iii. Sub Asset A.3	1. Further Sub Asset A.3.a
b. Asset B	i. Sub Asset B.1	
c. Asset C		

14.3. Attributes of Insured Assets by Type

[Dictionary: Specialised Underwriting Classes – Asset Attributes]

This dictionary will provide the relevant attributes or information for each asset type outlined in 3.2. This should highlight the necessary information which is required to make informed exposure conclusions and recommendations.

Table 23: Specialty asset attributes

Attributes: Asset A	**Attributes: Asset B**
Attribute 1	Attribute 1
Attribute 2	Attribute 2
Attribute 3	Attribute 3

14.4. Locations, Jurisdictions, and Geographical Area of Operation

[Dictionary: Specialised Underwriting Classes – Fixed Locations]

Location should be captured at the insured (account holder), policy, and asset level. Depending on the type of insurance, these can either be in the same location, or at different locations. By capturing all three, the legal jurisdiction, spatial exposure, and asset distribution can all be understood and reflected. The asset location can be difficult to calculate, and how it is captured can be unique to different lines of insurance.

U) Please comment on the proposed Specialised underwriting class framework. Is additional clarification or fields required for its feasibility?

Feedback

Thank you for taking part in the Phase 2 Version 0.9 consultation for the development of a multi-line insurance data schema.

We will credit the individuals and organisations who have assisted in the development of the schema in the final publication. If you are comfortable with being credited, please provide your name, job title and organisation, and list any colleagues who assisted and should be credited.

V) Please list the names, job titles, and organisation of people who helped with responses to this consultation.

Please email your completed consultation document by April 20th, 2018 to:

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