

An open source research programme for Smart Ledgers and new technologies



The Z/zen Group

Cyber-Catastrophe Insurance-Linked Securities On Smart Ledgers

Long Finance Webinar

Tuesday, 04 December 2018, 15:00 to 15:30 BST

(presentation starts at 15:01)

Z/Yen Group Limited
41 Lothbury
London EC2R 7HG
United Kingdom
tel: +44 (20) 7562-9562
www.zyen.com



@longfinance

Sponsored By
 **CARDANO**
FOUNDATION

Introduction



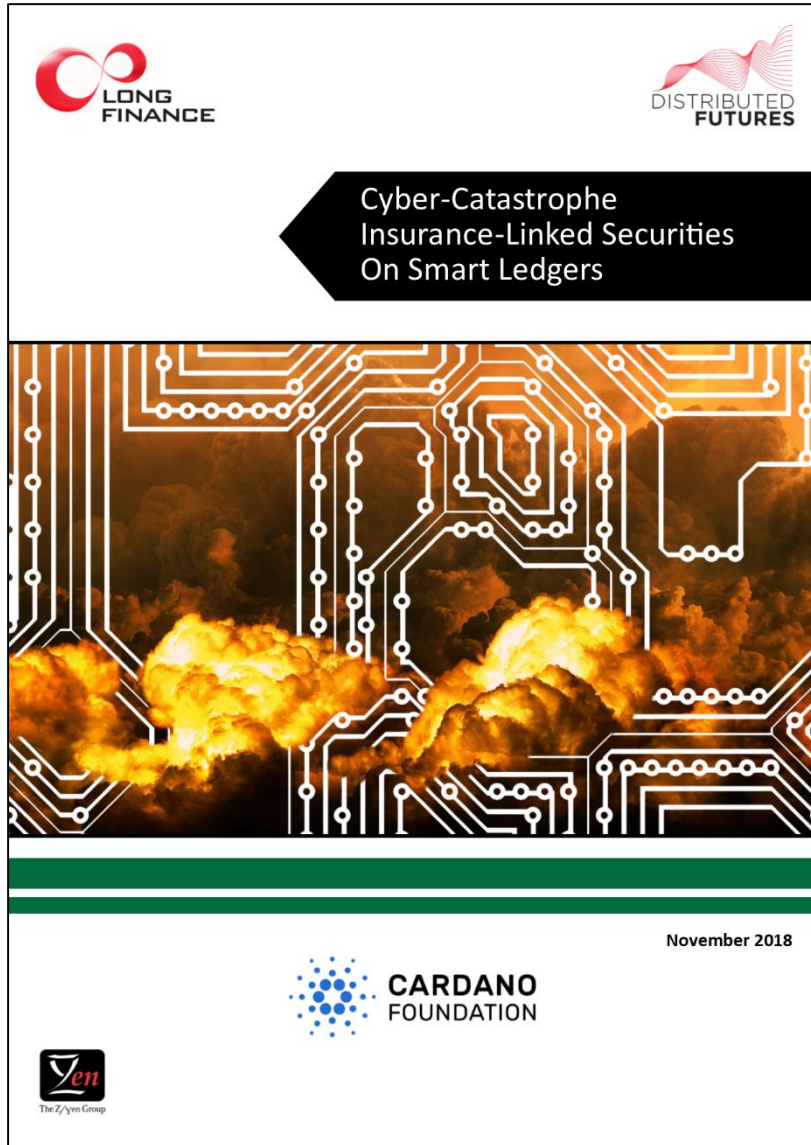
James Pitcher
Programme Director
Z/Yen Group

james_pitcher@zyen.com

Agenda

15:00 – 15:05	Welcome & Introduction
15:05 – 15:20	Presentation
15:20 – 15:25	Questions
15:25 – 15:30	Concluding Remarks

Report

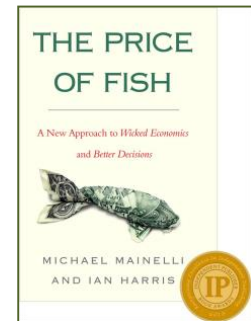
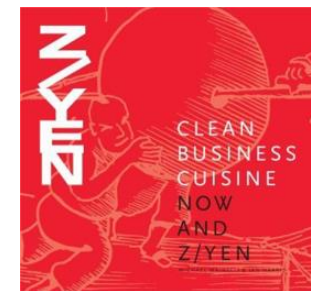


Read the report [here](#).



- ◆ **Special** – City of London’s leading commercial think-tank
- ◆ **Services** – projects, strategy, expertise on demand, coaching, research, analytics, modern systems
- ◆ **Sectors** – technology, finance, voluntary, professional services, outsourcing

- Independent Publisher Book Awards Finance, Investment & Economics Gold Prize 2012 for ***The Price of Fish***
- British Computer Society **IT Director of the Year** 2004 for PropheZy and VizZy
- DTI **Smart Award** 2003 for PropheZy
- *Sunday Times* Book of the Week, ***Clean Business Cuisine***
- £1.9M **Foresight Challenge Award** for Financial Laboratory visualising financial risk 1997





Distributed Futures Programme



We work in partnership with many stakeholders to learn together and build the vital infrastructure needed to make Smart Ledgers a success.

Our research is structured around four themes:

- ◆ Societal
- ◆ Technological
- ◆ Economic
- ◆ Political

Directed at four outcomes:

- ◆ Expanding frontiers
- ◆ Changing systems
- ◆ Delivering services
- ◆ Building communities







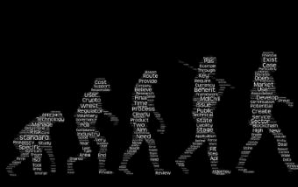




















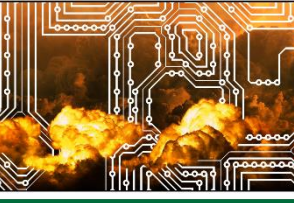
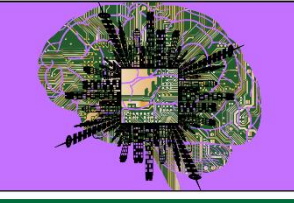






Sponsored By



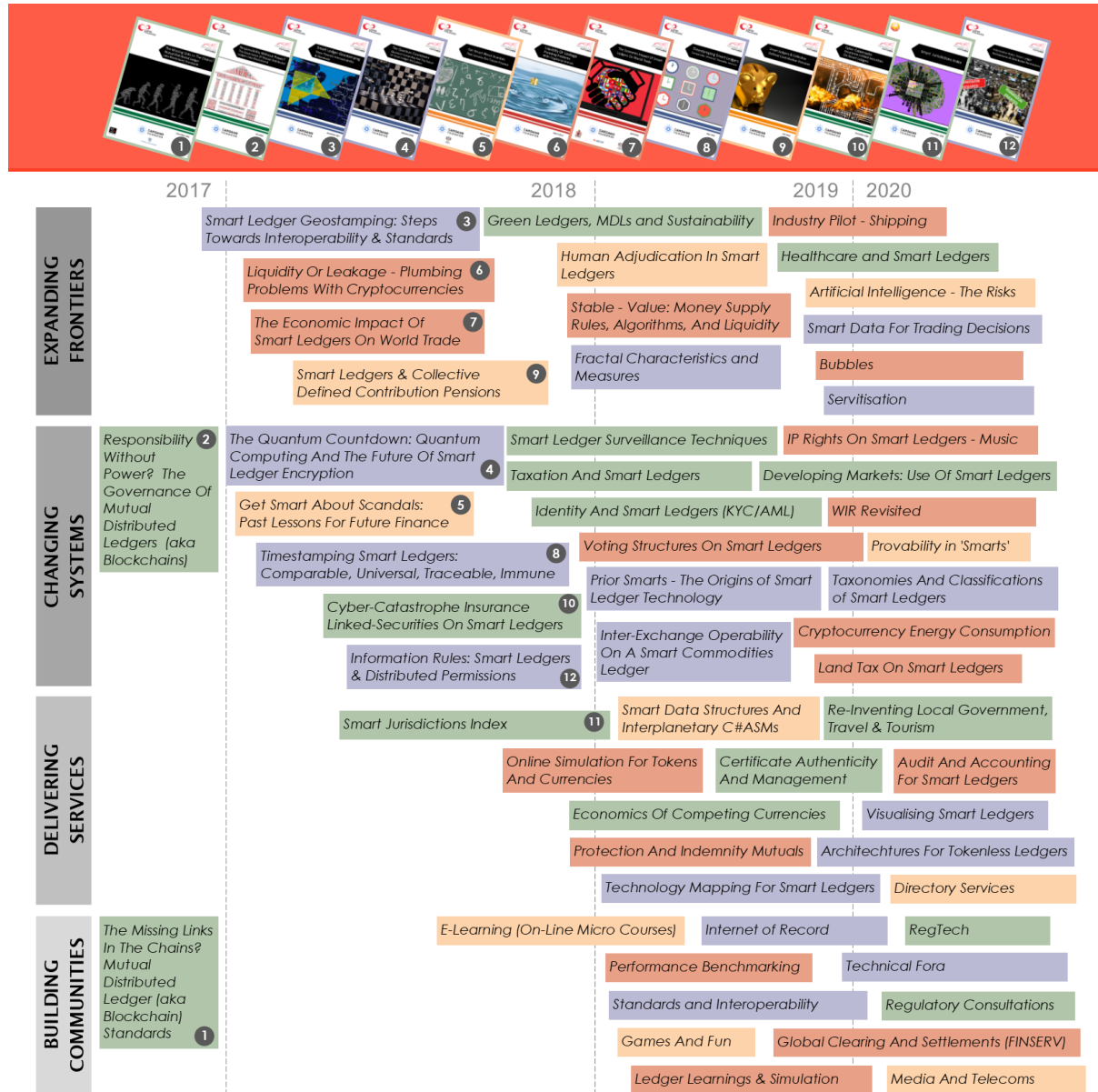
The Z/en Group

Distributed Futures Research

 <p>The Missing Links In The Chains? Mutual Distributed Ledger (aka Blockchain) Standards</p>	 <p>Responsibility Without Power? The Governance Of Mutual Distributed Ledgers (aka Blockchains)</p>	 <p>Smart Ledger Geostamping Steps Towards Interoperability & Standards</p>	 <p>The Quantum Countdown Quantum Computing And The Future Of Smart Ledger Encryption</p>	 <p>Get Smart About Scandals Past Lessons For Future Finance</p>	 <p>Liquidity Or Leakage Plumbing Problems With Cryptocurrencies</p>
					
 <p>November 2016</p>	 <p>July 2016</p>	 <p>December 2017</p>	 <p>February 2018</p>	 <p>March 2018</p>	 <p>March 2018</p>

 <p>The Economic Impact Of Smart Ledgers On World Trade</p>	 <p>Timestamping Smart Ledgers Comparable, Universal, Traceable, Immune</p>	 <p>Cyber-Catastrophe Insurance-Linked Securities On Smart Ledgers</p>	 <p>Smart Jurisdictions Index</p>	 <p>Information Rules: Smart Ledger Architectures & Distributed Permissions</p>
				
 <p>April 2018</p>	 <p>May 2018</p>	 <p>November 2018</p>	 <p>November 2018</p>	 <p>November 2018</p>

Timeline



Terminology Evolving

- ◆ **ledger** – a record of transactions
- ◆ **distributed** – divided among several or many, in multiple locations
- ◆ **mutual** – shared in common, or owned by a community
- ◆ **mutual distributed ledger (MDL)** - a record of transactions shared in common and stored in multiple locations
- ◆ **mutual distributed ledger technology** – a technology that provides an immutable record of transactions shared in common and stored in multiple locations
- ◆ **blockchain** - “a transaction database shared by all nodes participating in a system based on the Bitcoin protocol”
- ◆ **smart ledger** – MDL with embedded, executable code

Smart Ledgers Hold Immense Promise

Financial Instruments, Records, Models

Currencies	Derivatives
Commodities	Insurance Policies
Trading Records	Private and Public Equities
Certificates of Deposit	Bonds
Voting Rights (Financial Services)	Credit Data
Collateral Management	Client Monies Segregation
Mortgage / Loan Records	Crowd-Funding
P2P Lending	Microfinance
Account Portability	Airmiles / Corporate Tokens

Public Records

Land & Property Titles	Vehicle Registries
Shipping Registries	Satellite Registries
Business License	Business Ownership Records
Incorporation / Dissolution Records	Regulatory Records
Criminal Records	Passport
Birth / Death Certificates	Voting ID
Health & Safety Inspections	Tax Returns
Building & Other Types Of Permits	Court Records
Government / Listed Companies	Accounts & Annual Reports

Private, Semi-Private/Semi-Public

Contracts	ID
Signature	Will
Trust	Escrow
Other Classifiable Data	High School / University Degrees
Professional Qualifications	Certifications
Human Resources Records	Medical Records
Accounting Records	Business Transaction Records
Locational Data	Genome & DNA
Arbitration	Genealogy Trees

Physical Keys, Intellectual Property, Other Records

Home Key	Hotel Key
Office Key	Car Key
Deposit Box Key	Mail Box Key
Internet Of Things	Copyrights & Patents
Licenses	Digital Rights Management
Trademarks	Proof Of Authenticity / Authorship
Cultural Events	Historical Events
Documentaries	Big Data
SIM Cards	Archives

Presentation

Cyber-Catastrophe Insurance- Linked Securities On Smart Ledgers



Sam Carter
Author

Summary



Evolution



Catastrophe Bonds



Cyber Risk

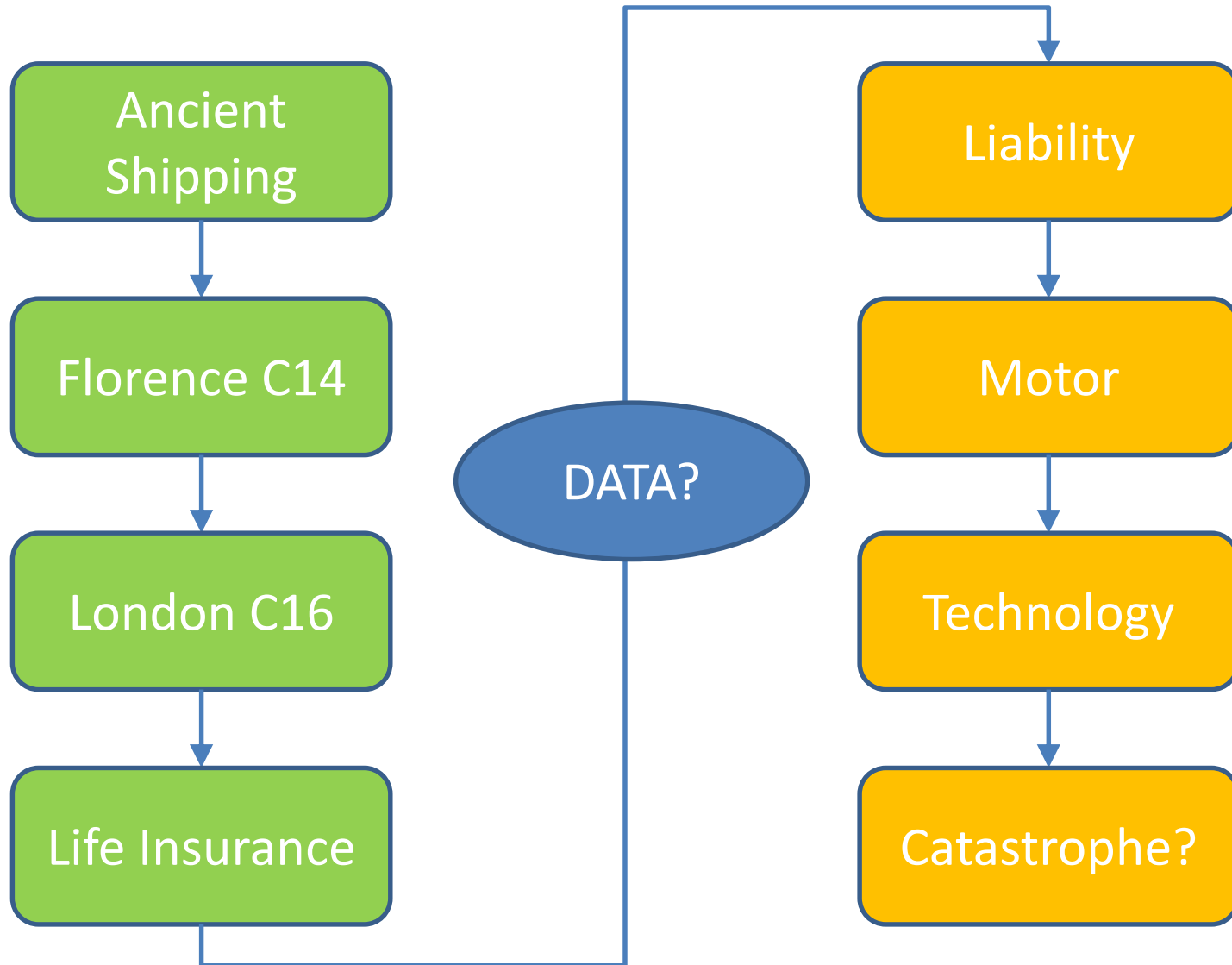


Cyber-Cat and ILSs

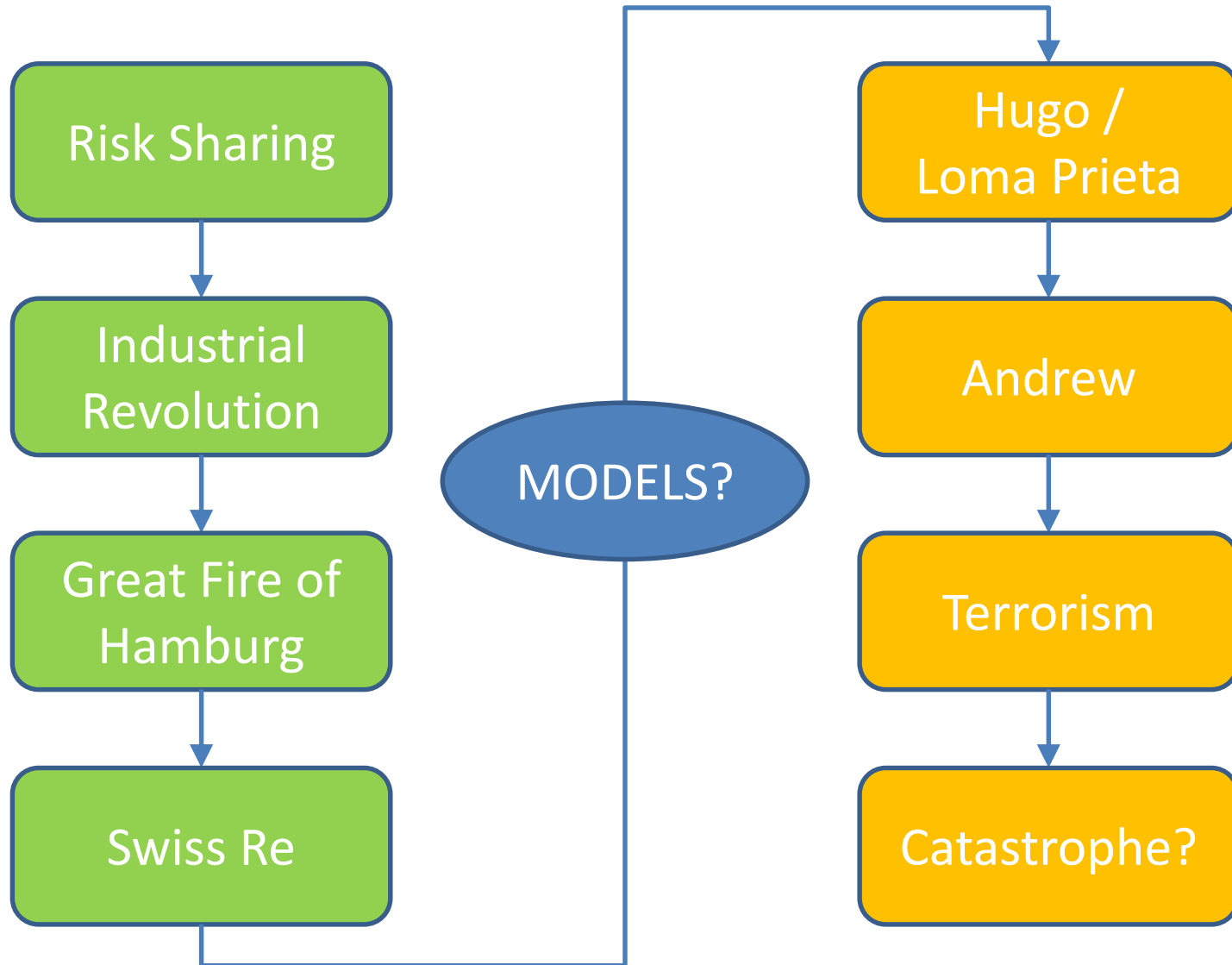


Demo

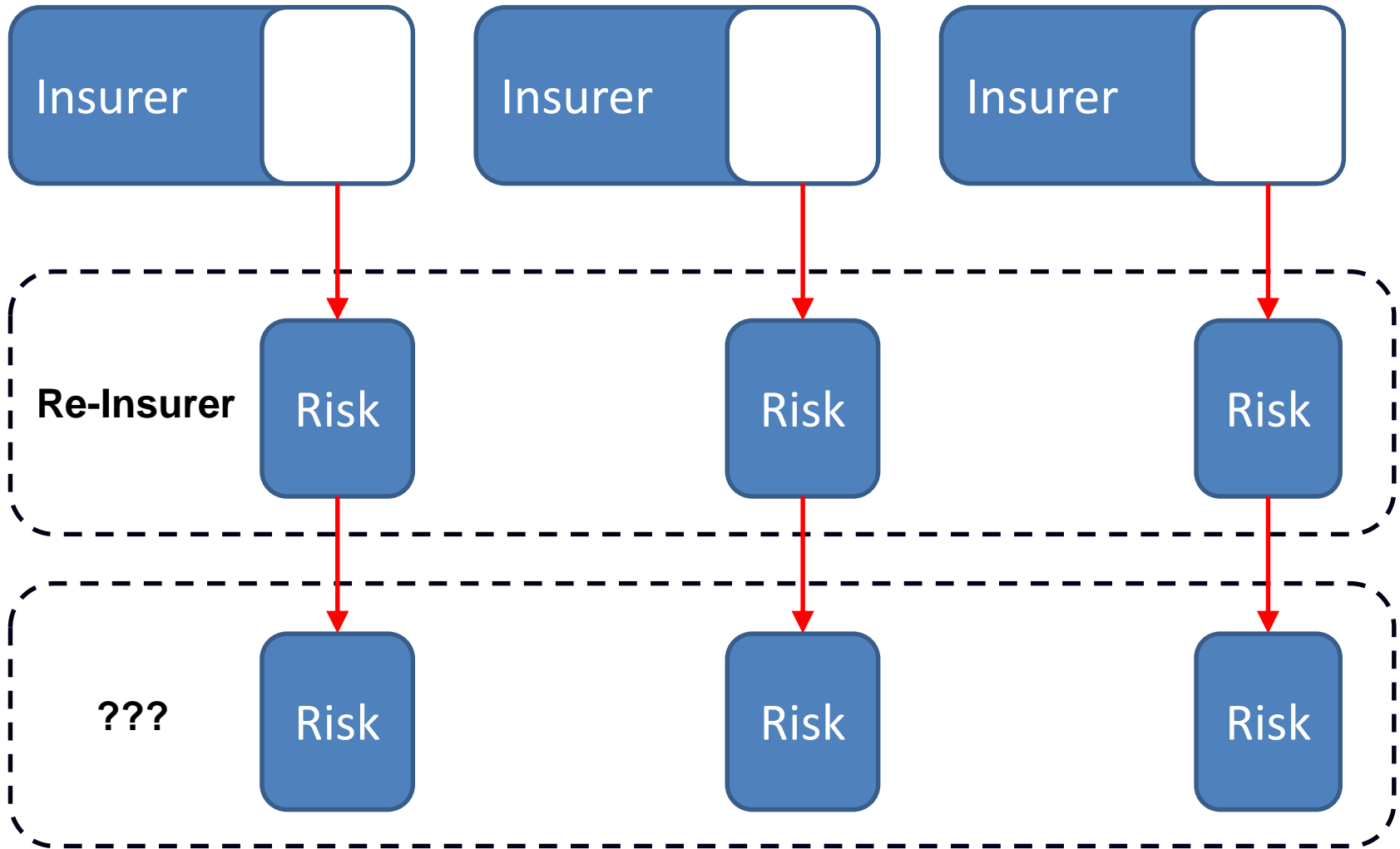
Evolution - Insurance



Evolution - Reinsurance

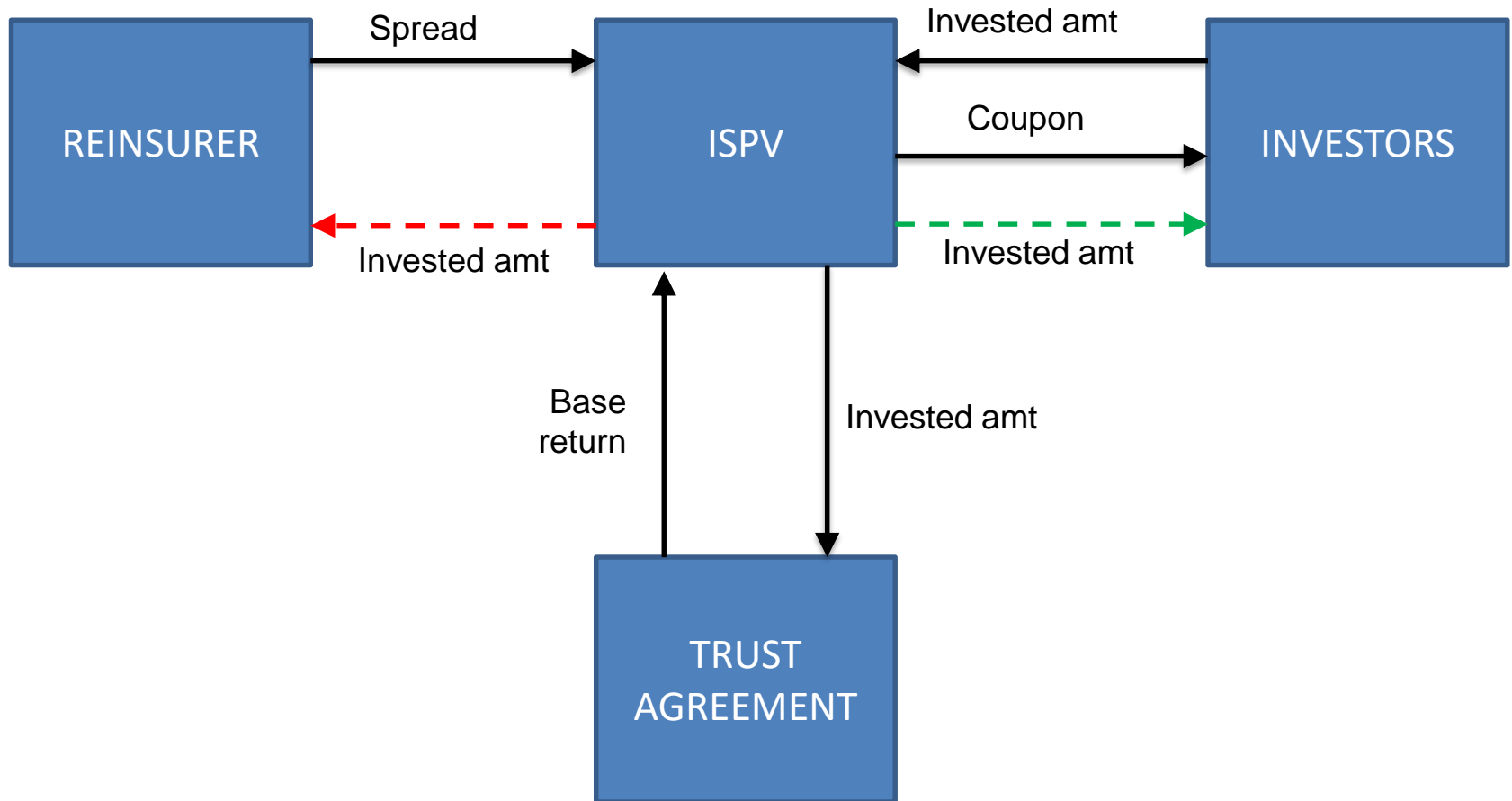


Passing On the Risk



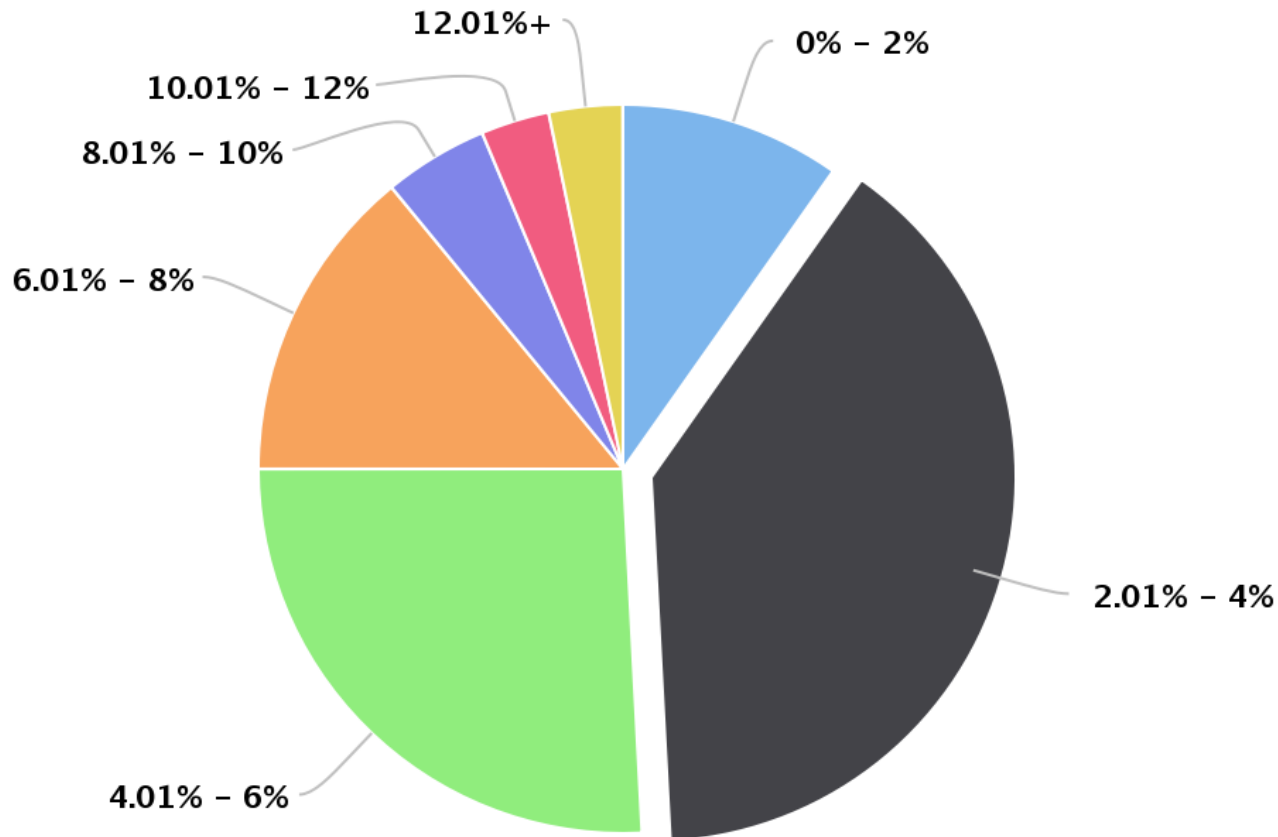
Insurance-Linked Securities

- ◆ Transfer of insurance risk to the capital markets.
- ◆ Usually linked to natural disasters.



Insurance-Linked Securities

Catastrophe bonds & ILS risk capital outstanding by coupon pricing



Insurance-Linked Securities

- ◆ Triggering and Parametrisation
- ◆ Non-Natural-Catastrophe ILS's
- ◆ Pandemic Emergency Financing
- ◆ Pool Re's Terror-Linked ILS

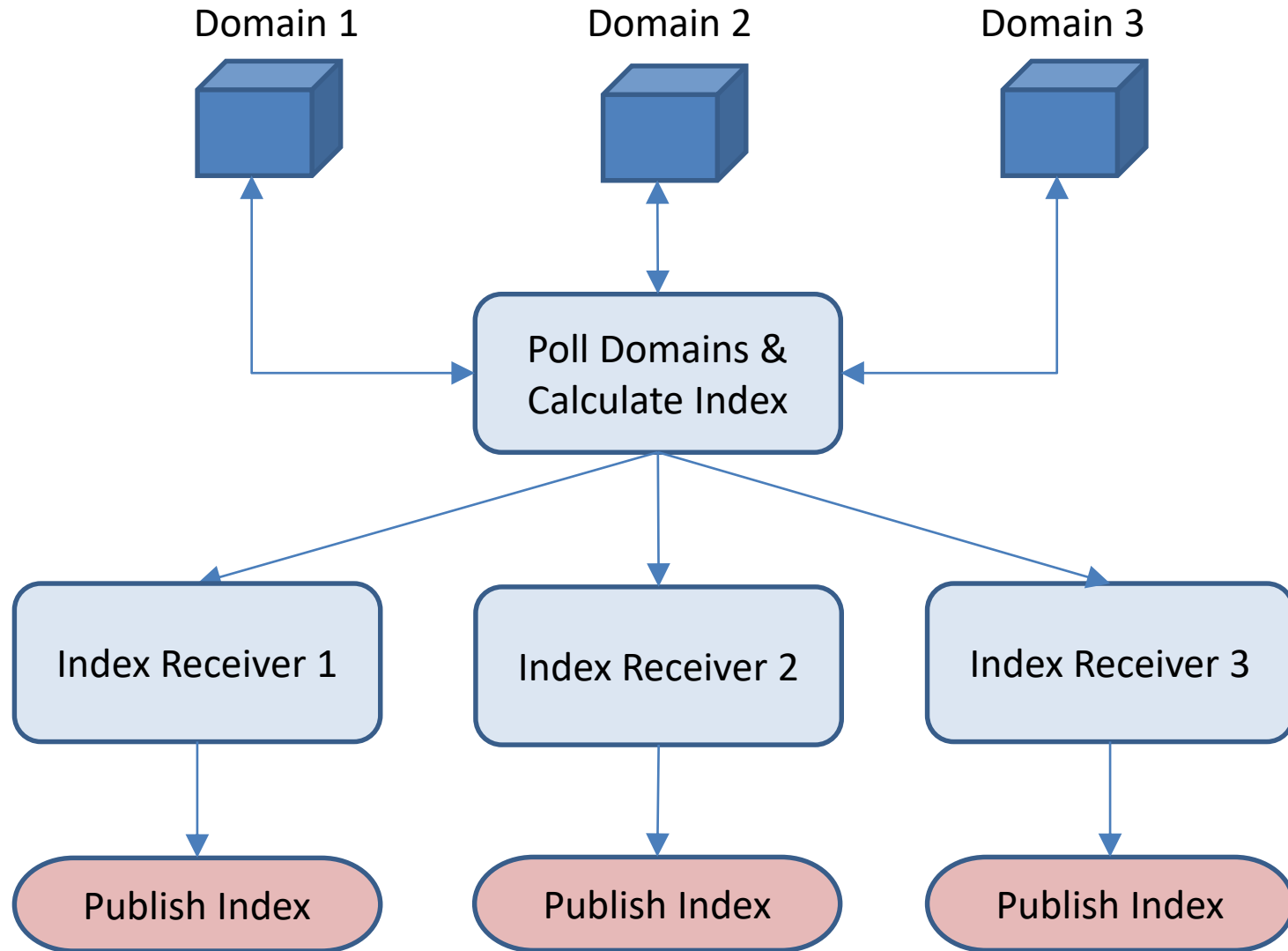
Cyber Coverage

Cyber Coverage	% of Products Offering this Cover
Breach of privacy event	92%
Data and software loss	81%
Incident response costs	81%
Cyber extortion	73%
Business interruption	69%
Multi-media liabilities (defamation and disparagement)	65%
Regulatory and defence coverage	62%
Reputational damage	46%
Network service failure liabilities	42%
Contingent Business Interruption	33%
Liability – Technology Errors & Omissions	27%
Liability – Professional Services Errors & Omissions	23%
Financial theft & fraud	23%
Intellectual property (IP) theft	23%
Physical asset damage	19%
Death and bodily injury	15%
Cyber terrorism	12%
Liability – Directors & Officers	13%
Liability – Product and Operations	8%
Environmental damage	4%

Business Interruption

- ◆ DoS and DDoS
- ◆ Cloud Outage
- ◆ Power Outage
- ◆ Hardware

A Technical Solution



Smart Ledgers

- ◆ The mechanism must be:
 - ◆ Public
 - ◆ Trustworthy
 - ◆ Robust

- ◆ Smart Ledgers:
 - ◆ Have a super audit trail
 - ◆ Are unalterable
 - ◆ Use a distributed architecture

Demonstration

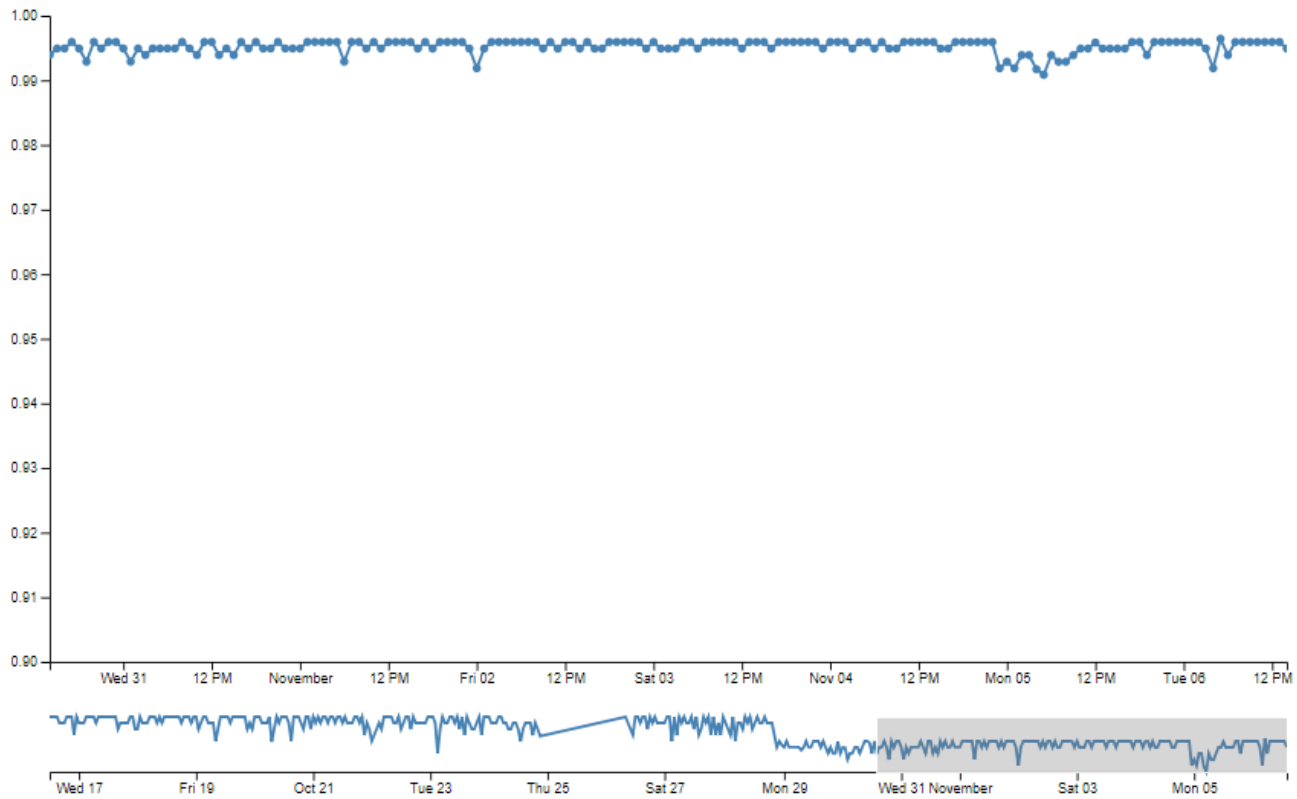
The Index



Cyber Catastrophe Insurance Linked Securities - Pilot

Architecture Demo

Live Index



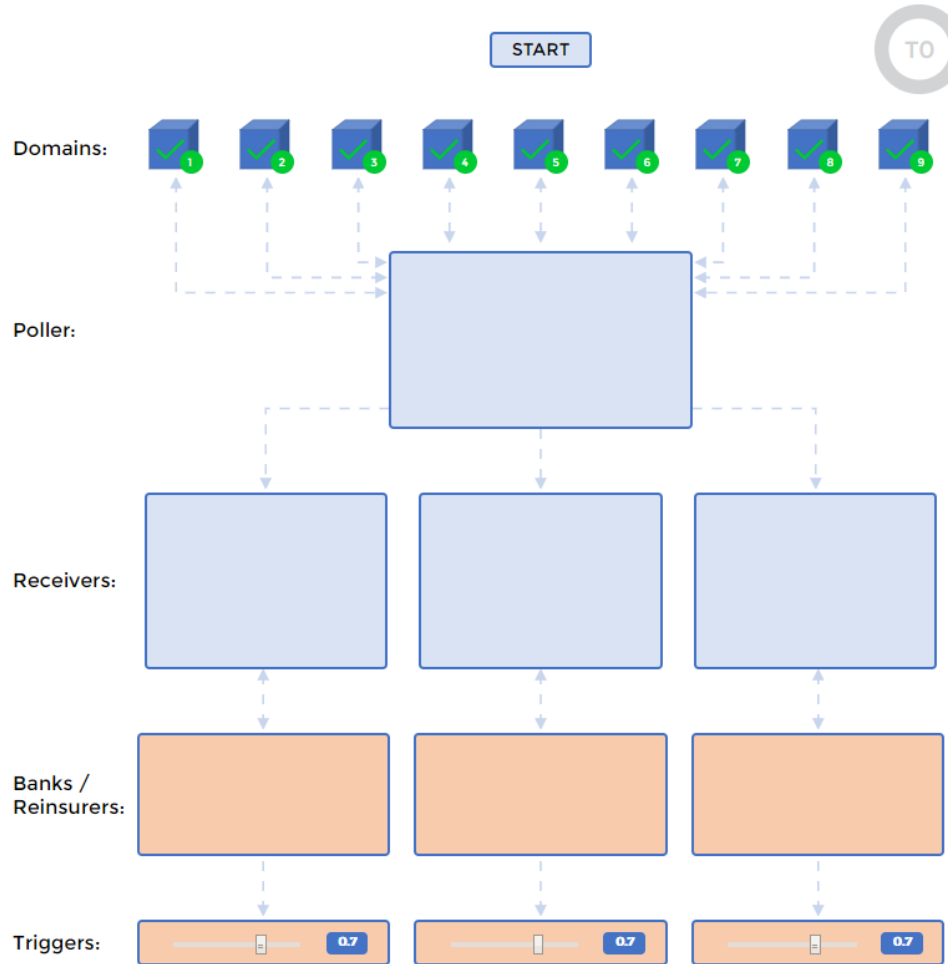
Architecture



Cyber Catastrophe Insurance Linked Securities - Pilot

Architecture Demo

Live Index



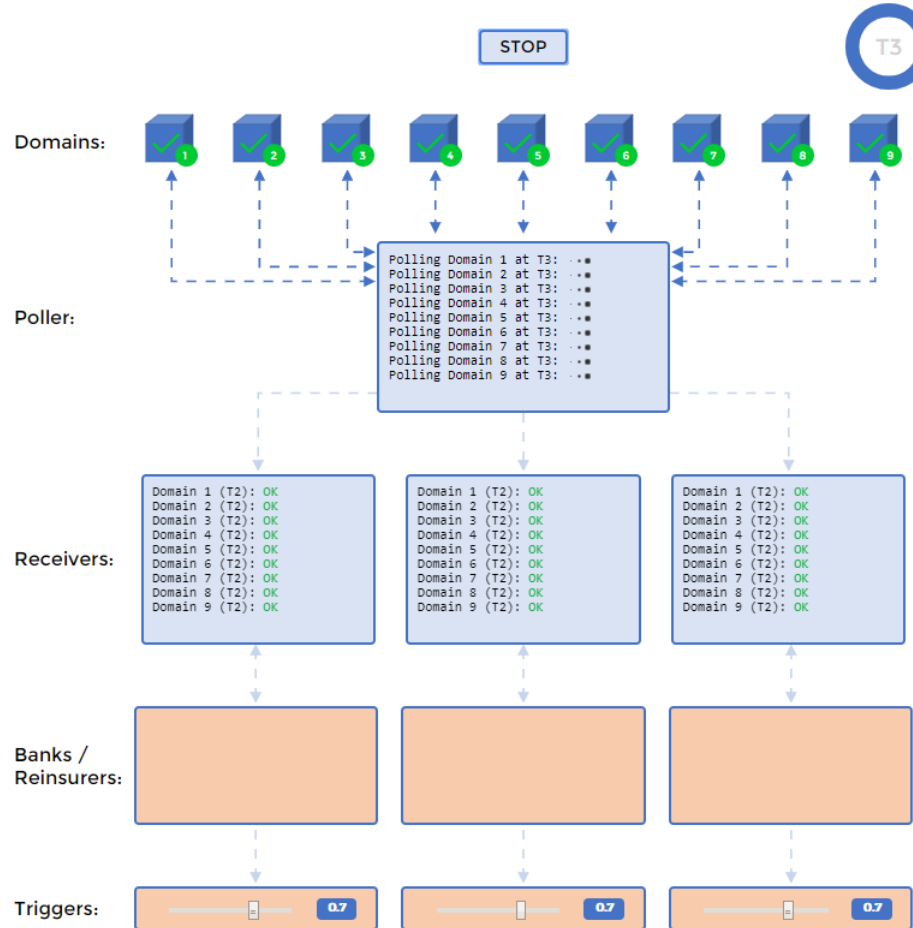
Polling



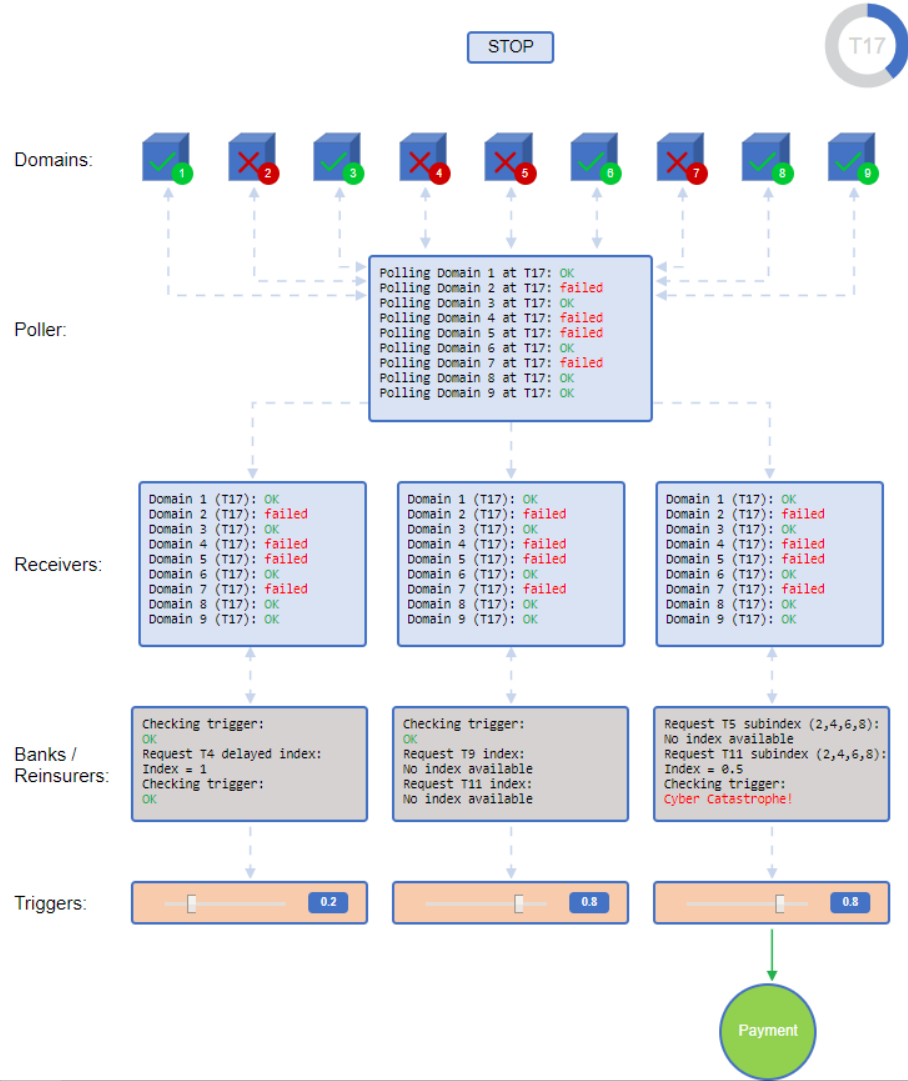
Cyber Catastrophe Insurance Linked Securities - Pilot

Architecture Demo

Live Index



Trigger



Cyber-Catastrophe Insurance-Linked Securities On Smart Ledgers

Questions

Concluding Remarks



James Pitcher
Programme Director
Z/Yen Group

james_pitcher@zyen.com

When Would We Know Our Commerce Is Working?



“Get a big picture grip on the details.”
Chao Kli Ning

Thank you!

