



Financial Markets Law Committee (“FMLC”)

Finance and Technology Scoping Forum

Date: Monday 20 February 2017

Time: 9.00am to 10.30am

Location: Bank of England, Threadneedle Street, London EC2R 8AH

In Attendance:

Joanna Perkins (Chair)	FMLC
Raymond Cox QC	COMBAR, The Commercial Bar Association
Simon Evers	Crowell & Moring
Acting Chairman J. Christopher Giancarlo	Commodity Futures Trading Commission (“CFTC”)
Mike Gill	CFTC
Andrew Harvey	Global Financial Markets Association
Richard Hay	Linklaters LLP
Siân Jones (by telephone)	European Digital Currency and Blockchain Technology Forum
Mark Kalderon	Freshfields Bruckhaus Deringer LLP
Nathaniel Lalone	Katten Muchin Rosenman UK LLP
Lewis Lee	CLS Bank International
Paul Lewis	Linklaters LLP
Fiona Maclean	Latham & Watkins LLP
Nina Moffatt	Baker McKenzie LLP
Matthew Nyman	Clear Funding
Scott O’Malia	International Swaps and Derivatives Association, Inc.(“ISDA”)
Eric Pan	CFTC
Simon Puleston Jones	FIA
John Salmon	Hogan Lovells International LLP
Nicole Sandler	Barclays Bank Plc
Mark Silverstein	Citigroup
Ian Sloyan	ISDA
Ian Stevens	CMS Cameron McKenna LLP
John Taylor	Queen Mary University of London
Kathleen Tyson	Granularity Ltd
Sanjev Warna-kula-suriya	Latham & Watkins LLP
Antony Zacaroli QC	South Square Chambers

Thomas Willett

FMLC

Regrets:

Douglas Arner	The University of Hong Kong
Kirsty Bell	Bank of England
John M. Casanova	Sidley Austin LLP
Peter Chapman	Clifford Chance LLP

Registered Charity Number: 1164902.

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Joel Harrison
Brian McDonnell
Professor Tetsuo Morishita
Marina Paul
Barney Reynolds
Carmen Reynolds
Michael Sholem
Ruth Wandhöfer
Atholl Wilton

Milbank Tweed Hadley & McCloy LLP
Addleshaw Goddard LLP
Sophia University of Law School
Lloyds Banking Group
Shearman & Sterling LLP
White and Case LLP
Davis Polk & Wardwell LLP
Citigroup
CQS (UK) LLP

Minutes:

1. Introduction

1.1. Joanna Perkins (Chair) opened the meeting and gave a brief introduction.

2. Remarks of Acting Chairman J. Christopher Giancarlo

2.1. Acting Chairman Giancarlo gave short remarks to the Forum and took questions.

2.2. The Acting Chairman's remarks highlighted how innovation in Finance and Technology ("FinTech") offers great potential to regulators and market participants alike. He emphasised how this potential would limit human interaction, changing the way products are traded. Cyber security and new methods of updating intermediaries' books and records were outlined as areas which could benefit from the application of distributed ledger technologies ("DLT").

2.3. The CFTC has identified five key steps that regulators can take in promoting DLT and other technologies: (i) putting a best foot forward; (ii) allowing breathing room for sandbox developments; (iii) to get the regulators involved; (iv) listening and learning from FinTech companies; and (v) collaborating globally.

2.4. The Forum responded positively to these five steps, emphasising FinTech's potential to stimulate economic activity which would align the interests for global cooperation.

2.5. The discussion which followed Mr Giancarlo's remarks touched on regulation and regulatory technology. Discussants observed that technological innovation challenges the regulatory and legal *status quo*. It was suggested that the current rules might not prove serviceable in the face of disruptive change, and that, in future, regulation will need to be applied according to a principles-based approach to accommodate rapid innovation and the accelerating evolution of the financial markets.

2.6. Acting Chairman J. Christopher Giancarlo, Eric Pan and Mike Gill left the meeting at this point.

3. An introduction to ISDA’s work on smart contracts and blockchain via FpML (Ian Sloyan)¹

3.1. Ian Sloyan first noted research undertaken by ISDA on the future of technology in derivatives markets by ISDA’s Market Infrastructure and Technology department and then discussed specifically the production of a demo smart contract based on an Interest Rates Swap.

3.2. For smart contracts and blockchain to be successfully integrated within the financial markets, it was stressed that keeping links to current legal basis for derivatives markets, i.e. ISDA’s documentation suite and the ISDA Master Agreement, was crucial for these technologies to work.

3.3. The discussion that followed focused on issues with translating smart contract systems into reality, with particular emphasis on how discretion can be encoded. It was concluded that making the whole trading lifecycle “human-free” may be too optimistic and that smaller steps need to be taken first.

3.4. Conflicts of law aspects of cross-border applications were identified as a significant area of potential legal uncertainty. The Forum suggested that this could be a discussion point at a future meeting.

3.5. Ultimately, the forum arrived at the consensus that there is great potential for smart contract implementation and expectations as to what can be coded are likely to be exceeded.

4. Forum administration

4.1. Joanna Perkins outlined the remit of the FMLC, the practical meaning of “legal uncertainty” within this remit, the mission which derives from the remit, the role of scoping fora within this mission, the six purposes which are fulfilled by the eight scoping fora which the FMLC has established so far and the questions which it would be helpful for members to address in 2017.²

¹ Please see Appendix I below.

² Please see Appendix II below.

4.2. The procedure of publishing Forum documents on the FMLC website within the public domain was outlined. No concerns or questions were raised.

5. Any other business

5.1. No other business was raised.

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Appendix I: An introduction to ISDA's work on smart contracts and blockchain via FpML



Ian Sloyan

International Swaps and Derivatives Association, Inc.



Safe,
Efficient
Markets

Bank of England, London
20th February 2017

Introduction to ISDA's work on smart contracts, and blockchain, via FpML

Introduction to blockchain and smart contracts

ISDA's work on smart contracts, and blockchain is interlinked with recent research presented in an ISDA whitepaper: [The Future of Derivatives Processing and Market Infrastructure - click here](#)

The potential of *Blockchain* and distributed ledger technology is well documented, particularly its potential applications in financial services.

The deployment of *Smart Contracts* on *Blockchains* is an application which could have a major positive impact on derivatives markets.

As a publisher of industry agreed standards for derivatives products, particularly the legal framework and definitions which underpin the trading of derivative products, ISDA can play a key role in the development and publication of these *Smart Contracts* in a standard form based on the incumbent legal framework that can potentially be used across multiple *Blockchains*/distributed ledgers.

ISDA aims to engage with its current membership on this topic, to aid this engagement, and as a prop for further discussions, on what is possible, and how ISDA can help the industry develop any potential solutions, Luther Systems has developed a *Smart Contract* demonstration of a vanilla fixed versus float interest rate swap ISDA contract (IRS) from an [FpML](#) representation of the confirmation of an IRS on one particular blockchain technology – a *Smart IR Swap*.

Luther Systems' demo of IRS on *Blockchain*

A more comprehensive version of this presentation can be found [here](#).

[A video presentation of the demo IRS can be found here](#) (turn on audio)

The *Smart IR Swap* was built from an FpML confirmation template, then deployed and executed on a blockchain

Based on the FPML documentation the variables involved in a IRS are listed below, some simplifying assumptions were made in the implementation as follows:

1. Inputs assumed to be fixed:
 - Id, business center, trade date, trade date adjustment, effective date adjustment, end date adjustment, calculation date adjustment, payment date adjustment, floating rate index curve, floating rate tenor, fixing dates, currency.
2. Inputs assumed to be dictated by other attributes:
 - Payment frequency, period multiplier, payment period.
3. Variable inputs supported:
 - Effective date, end date, reset dates, notional, fixed rate, day count convention, calculation period frequency, calculation period multiplier.

Smart IR Swap: Improved Efficiency and Lowered Costs

Processing and executing Smart IR Swap has a number of advantages that can ultimately improve efficiency and lower costs.

Specifically, **Transaction settlement** is moved to near instantaneous;

The need for **reconciliation** is eliminated as users share common source of truth;

Reporting is more efficient as users share common transaction templates and data standards;

Regulators can participate directly on the blockchain network and have real time access to transactions;

This results in **considerable cost savings**, estimated at billions of dollars annually.

Further considerations and extensions

What else can be modelled on a blockchain?
What areas require further investigation?

Legal

Technology

Business process

Margin Implementation
(Initial Margin, Variation Margin, reuse of collateral, etc.)

Netting

Master Agreements

Trade confirmations

Synthesise a market
(i.e. multiple parties transacting with each other under different terms)

Clearing

Counterparty default forced terminations/closeouts (automatic or not?)

Credit Support Annexes

Smart IRS contract on other blockchain fabrics

Trade execution

E.g. Smart IR Swap contract on Hyperledger

Market transparency (public) reporting

Valuations

Other asset classes (Equities, Credit, Commodities, FX)

Cross border transactions

Post trade corrections/amendments to trade terms

Risk and capital analyses

Other IR product smart contracts (Swaption, FRA, etc.)

Conflict of law issue

Regulatory reporting for systemic risk

Reconciliations

ANNEX - About ISDA

Since 1985, ISDA has worked to make the global derivatives markets safer and more efficient. Today, ISDA has over 850 member institutions from 66 countries. These members comprise a broad range of derivatives market participants, including corporations, investment managers, government and supranational entities, insurance companies, energy and commodities firms, and international and regional banks. In addition to market participants, members also include key components of the derivatives market infrastructure, such as exchanges, intermediaries, clearing houses and repositories, as well as law firms, accounting firms and other service providers. Information about ISDA and its activities is available on the Association's web site: www.isda.org

A more comprehensive version of this presentation can be found [here](#).

**Appendix II: THE FMLC RADAR
FUNCTION:
*an introduction***



Joanna Perkins, CEO

Financial Markets Law Committee

FMLC Remit

“The role of the Financial Markets Law Committee (the "FMLC" or the "Committee") is to identify issues of legal uncertainty, or misunderstanding, present and future, in the framework of the wholesale financial markets which might give rise to material risks, and to consider how such issues should be addressed.”

FMLC Founding Documents, September 2002



What this means...

"But in my view, legal uncertainty is just another name for legal risk: the risk of increased litigation over legal rights that are poorly defined, the risk of market disruption because legislation has unintended consequences, or the risk that market standard contracts turn out to be unenforceable. These are broadly the sorts of issues the FMLC has been established to tackle."

Joanna Perkins, FMLC Chief Executive



FMLC Mission



- According to the remit, the FMLC has a tripartite mission:
 - to identify relevant issues (the **radar** function);
 - to consider such issues (the **research** function); and
 - to address such issues (the **public education** function).
- The first and second of these are fulfilled in part by the establishment of specialist scoping forums.
- In particular, the **radar function** relies heavily on the FMLC's scoping forums and other horizon-scanning, advisory bodies.

Scoping Forums

“Scoping forums serve as an avenue for the FMLC to engage with focus groups on legal issues affecting specific segments of the financial markets. The forums serve as spaces for discussion of broader issues of legal uncertainty, and members formulate and propose to the FMLC issues considered by them to cause substantive legal uncertainty to their industry.”

FMLC Brochure, January 2017



How Scoping Forums work...



- A scoping forum, then, should serve six key purposes:
 1. to establish a pool of expertise available to the FMLC;
 2. to enable full discussion among interested parties with a view to facilitating collective legal risk assessment;
 3. to guide the FMLC and establish priorities for the expenditure of resources;
 4. to make recommendations to the FMLC as to specific issues to be addressed;
 5. to make non-binding suggestions as to the manner of the FMLC's engagement with the issues; and
 6. to nominate experts to working groups.
- At this time of significant political change, the FMLC Secretariat would be grateful for assistance with items 2-4, in particular.

Questions, questions...

- Assuming the FMLC has limited resources to devote to FinTech issues, in 2017, which are those that it should prioritise?
- Are there significant uncertainties affecting the FinTech industry in the context of Brexit?
- Do members think that work in the field of cybersecurity and RegTech might be useful? (For example, are best practice standards in these fields emerging and do these promote or hinder legal certainty? Are there legal implications which flow from the automation of the compliance function via RegTech?)
- Does the Forum agree that the flow of information between members and the FMLC Secretariat should ideally be a 2-way process? How can the Secretariat best assist the Forum in its discussions?
- Does the Forum agree that the Secretariat should table updates for the Forum on issues which the FMLC considers relevant to the industry, although not a commercial priority (e.g. developments in other jurisdictions)?

Summary and Conclusion



To sum up...

- The FMLC is tasked with identifying, considering and addressing legal uncertainty...
- ...which is sometimes better thought of as “legal risk”.
- The Forum is a means by which the FMLC can fulfil its radar function.
- The Forum serves six key purposes.
- At this time, the FMLC Secretariat would be grateful for help with assessing legal risks, identifying priorities and selecting issues for further work.
- The Secretariat has highlighted questions for possible consideration.*

**For a fuller list of questions for consideration, please apply to the Secretariat, which will make one available by email or at the next meeting.*