

ISDA<sup>®</sup>

**LEGAL GUIDELINES FOR  
SMART DERIVATIVES  
CONTRACTS:  
INTRODUCTION**

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## INTRODUCTION

The purpose of these guidelines is to explain the core principles of ISDA documentation and to raise awareness of the important legal terms that should be maintained when a technology solution is applied to derivatives trading.

In presenting this material, an assumption is made that certain terms in the ISDA documentation are capable of being (and may currently be) represented in computer code or performed across a technology platform. For example, payments-related provisions that require one party to pay another an amount that is calculated on the occurrence of a certain event may be suited to codification or automated processing. It is also assumed that some provisions of the ISDA documentation may not be as well suited or efficient to code and will remain as written in the contract.

The intention of this paper is not to specify or recommend any particular approach or to address any particular technological application or project. Rather, it is intended to provide high-level guidance on the legal documentation and framework that currently governs derivatives trading, and to point out certain issues that may need to be considered by technology developers looking to introduce technology into that framework.

These guidelines discuss legal issues from time to time. These discussions are intended to provide general guidance, not legal advice, and to promote a better understanding of the basic principles that underpin ISDA documentation. In practice, the laws relating to derivatives transactions and the legal documentation that governs them are complex, may change over time due to evolving case law and new regulations, and may vary substantially from jurisdiction to jurisdiction.

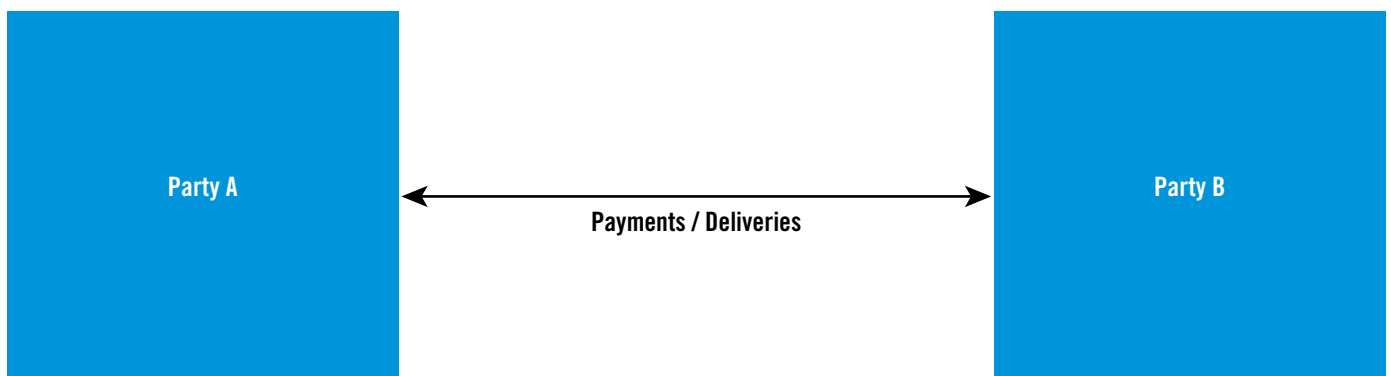
These guidelines do not represent an explanation of all relevant issues or considerations in a particular transaction, technology application or contractual relationship. Parties should therefore consult with their legal advisors and any other advisor they deem appropriate prior to using any standard ISDA documentation. ISDA assumes no responsibility for any use to which any of its documentation or any definition or provision contained therein may be put.

## ISDA LEGAL GUIDELINES FOR SMART DERIVATIVES CONTRACTS

Derivatives are fertile territory for the application of smart contracts and distributed ledger technology (DLT) because their main payments and deliveries are heavily dependent on conditional logic. However, these technologies are at a relatively early stage of development and there is still a lack of agreement on what a smart contract is, what role these technologies can play in the derivatives market, and how these technologies might interact with existing legal standards and documentation.

At present, most proofs-of-concept of new technologies for over-the-counter (OTC) derivatives transactions are focused on events that take place at the transaction level, such as the automation of payment obligations or collateral transfers (see Figure 1).

**Fig 1:** Obligations at the Transaction Level

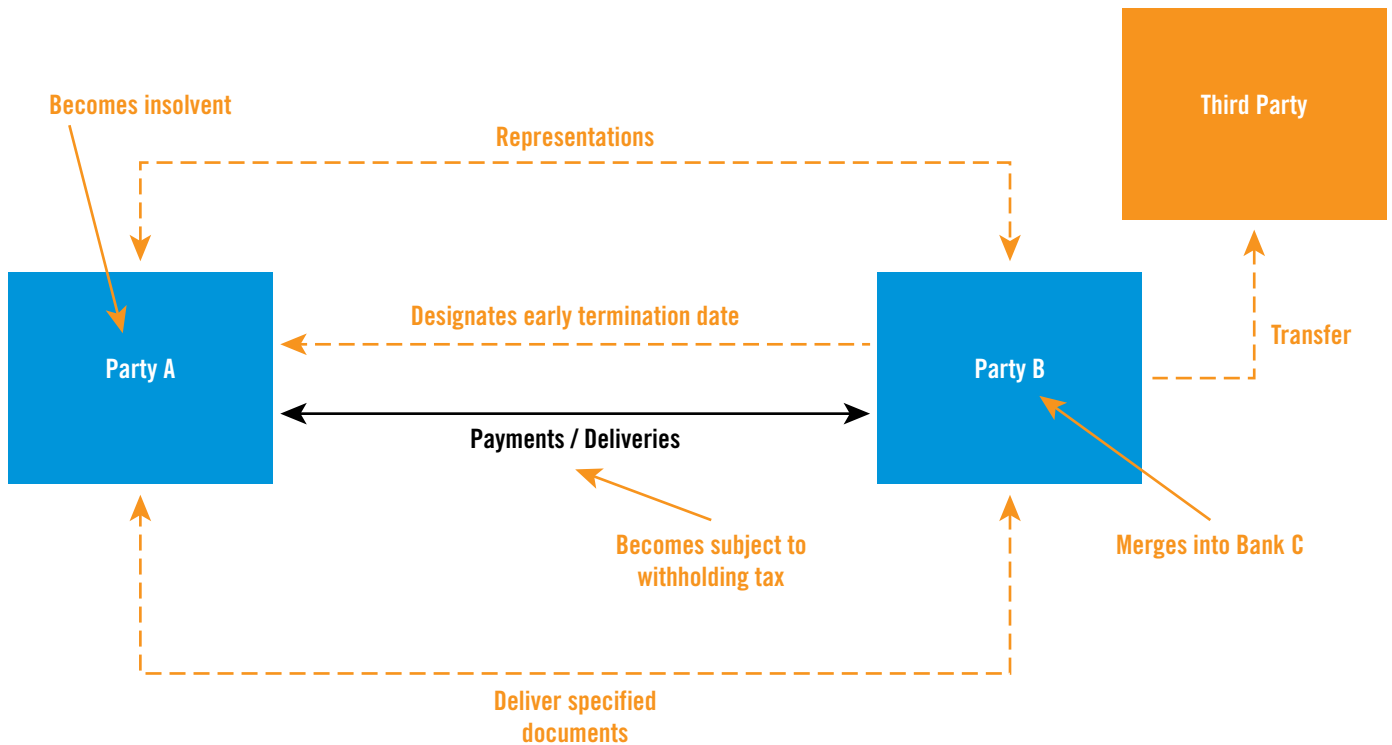


However, this narrow focus on the economic terms and payment mechanics within individual transactions does not take into account the overarching contractual terms that derive from the broader contractual relationship.

The example in Figure 2 illustrates some of the complexity that may occur beyond the individual transaction level and might affect the broader contractual relationship between the parties, including:

- The provision of representations;
- The requirement to deliver certain documents to a counterparty;
- A payment obligation becoming subject to a withholding tax;
- The transfer of transactions as a result of a merger with another entity; and
- The insolvency and consequent default of a party.

Fig 2: Complexity Beyond the Transaction



Focusing exclusively on the economic terms of an individual transaction may ignore much of the external complexity that can affect a party's ability to perform its obligations (or assert its rights) in relation to that transaction.

In designing and applying technology enabled solutions for the trading or processing of derivatives, technology developers need to be aware that the legal terms of the ISDA Master Agreement, the supporting documentation and each individual transaction that sits underneath it should not be disturbed without due legal consideration and advice on the potential impact.

This presents technology developers with a challenge: to bring the benefits of technology to aspects of the lifecycle of a transaction (such as payments and settlements, collateral exchange, notifications or calculations) without disrupting the legal foundations on which the ISDA documentation architecture is based.

This paper provides high-level and foundational legal guidance on how the ISDA documentation architecture works and identifies contractual and documentation issues that may be relevant as derivatives market participants seek to develop and implement new platforms, products and solutions for use within the derivatives industry.

These guidelines will be supplemented from time to time by publication of further papers covering individual ISDA documents, including the ISDA Master Agreement, collateral documentation and product-specific documentation and templates.

## WHAT ARE SMART DERIVATIVES CONTRACTS?

The term ‘smart contract’ can be interpreted in a number of different ways.

In 2017, ISDA and Linklaters jointly published a whitepaper, *Smart Contracts and Distributed Ledger – A Legal Perspective*<sup>1</sup>. That paper describes what smart contracts are, and highlights an important distinction between smart contract code and smart legal contracts<sup>2</sup>.

To facilitate discussion and to avoid misunderstanding between the legal and technology communities, it is important that these distinctions are understood.

For example, when lawyers speak about smart contracts, they may be referring to a ‘smart legal contract’, which envisages a written and legally enforceable contract where certain of the obligations may be represented or written in code.

Computer scientists may interpret the term more narrowly as a piece of ‘smart contract code’, which is designed to execute certain tasks if pre-defined conditions are met.

Creating a universal description of the term ‘smart contracts’ that encapsulates both possibilities is challenging. One of the best definitions of this term is provided by Clack, Bakshi and Braine<sup>3</sup>:

*“A smart contract is an automatable and enforceable agreement. Automatable by computer, although some parts may require human input and control. Enforceable either by legal enforcement of rights and obligations or via tamper-proof execution of computer code.”*

The legal perspectives paper also distinguishes between two different models of smart legal contract: the external model and the internal model. In the external model, the coded provisions remain external to the legal contract, and represent only a mechanism for automatic performance. In the internal model, the provisions that can be performed automatically are included in the legal contract, but are rewritten in a more formal representation than the current natural language form. A computer could then take this more formal representation and automate performance.

The application of smart contracts to the ISDA documentation framework may allow for the potential development of derivatives contracts where some terms are capable of being automatically performed, either by expressing those provisions using some formal representation that enables their automation or by referring to the operation of smart contract code that is external to the contract.

In these guidelines, we refer to such derivatives contracts as ‘smart derivatives contracts’.

<sup>1</sup> ISDA and Linklaters LLP, *Smart Contracts and Distributed Ledger – A Legal Perspective* (August 2017), [www.isda.org/a/6EKDE/smart-contracts-and-distributed-ledger-a-legal-perspective.pdf](http://www.isda.org/a/6EKDE/smart-contracts-and-distributed-ledger-a-legal-perspective.pdf)

<sup>2</sup> In doing so, the legal perspective paper makes reference to Stark, J. (2016) *Making sense of blockchain smart contracts*, available at: <https://www.coindesk.com/making-sense-smart-contracts>

<sup>3</sup> Clack, C.D., Bakshi, V.A., Braine, L. (2016) *Smart Contract Templates: foundations, design landscape and research directions*, Revised March 15, 2017, available at: [arxiv.org/pdf/1608.00771.pdf](http://arxiv.org/pdf/1608.00771.pdf)

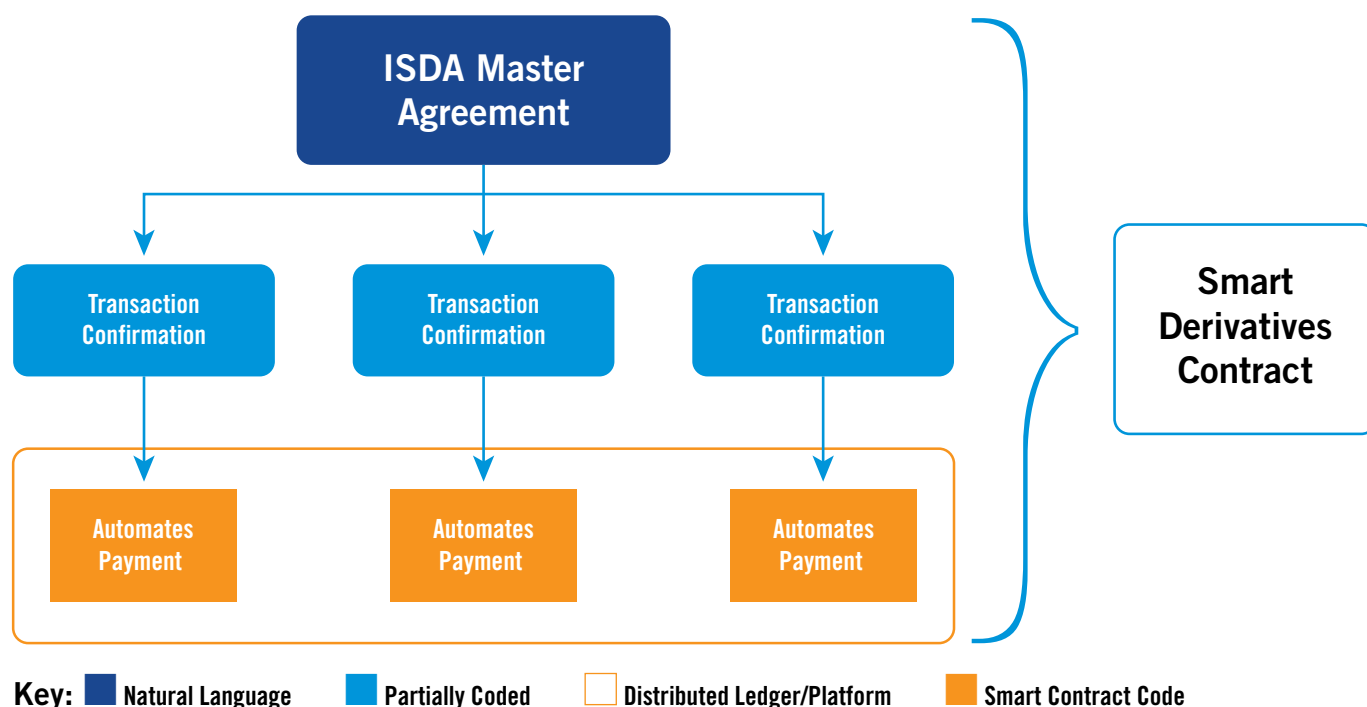
## SMART DERIVATIVES CONTRACT MODELS

### Smart Derivatives Contracts

While these guidelines are agnostic about the types of technology and smart derivatives contract model used, it is important to acknowledge that significant work in this area has already been undertaken. For example, many technology solutions currently under development contemplate the use of technology in the automation and recording of payments across a wide range of financial products.

Figure 3 provides an illustration of a potential smart derivatives contract construct where payments under a series of transactions are automated.

**Fig 3: Smart Derivatives Contracts**



In this example, the parties enter into an ISDA Master Agreement as normal. Commercial terms relating to the transaction would continue to be contained in a transaction confirmation. However, those provisions that are to be automated (eg, those relating to payment obligations) are represented in code, such that the smart contract code actually forms part of the legal contract.

In this example, it is assumed that the automated payment obligations within each transaction confirmation will be implemented as separate pieces of smart contract code, as each transaction will have different parameters relating to payment (eg, the respective payment obligations under each may be determined using different inputs, at different times and/or using different calculation methodologies).

A similar construct might involve the written confirmation referring to code that, although is intended to automate performance of contractual obligations, sits outside the written contract itself. It is here, in the subset of contractual obligations that can already be digitized and automated, that ISDA's Common Domain Model project is focused to-date.

## The ISDA Common Domain Model

The ISDA Common Domain Model (ISDA CDM™)<sup>4</sup> is a blueprint for how derivatives are traded and managed across the trade lifecycle. Having a single, common digital representation of derivatives trade events and actions will enhance consistency and facilitate interoperability across firms and platforms, providing a bedrock upon which new technologies (such as DLT and smart contracts) can be applied.

In the ISDA CDM version 1.0, ISDA has set out, in a machine-readable format, an initial representation of events that occur during the life of a derivatives trade<sup>5</sup>.

The ISDA CDM project is initially focused on transaction-level clauses and definitions for the interest rates and credit asset classes, but is moving to incorporate models for equity derivatives products and collateral data and processes in its next phase. The ISDA CDM builds on the Financial products Markup Language (FpML)<sup>6</sup> model, which in turn is a digital representation of the data points/attributes found in the ISDA definitions.

## Distributed Ledger Technology

Smart derivatives contracts do not necessarily need DLT to function, and the adoption of smart derivatives contracts could be facilitated through other technology solutions. However, DLT is well-suited to the implementation of smart contract technology.

These guidelines therefore assume that many smart derivatives contract models and applications may make use of DLT in some form.

Where appropriate these guidelines will seek to draw a distinction between:

1. A distributed ledger, which is akin to a sophisticated messaging system that enables communications between participants but where payments settle off-chain via existing payment systems like SWIFT (a ‘light chain’); and
2. A distributed ledger that could provide the infrastructure to support an entire trading relationship between two parties by, for example, being able to house assets that are native to the ledger and support the transfer of such assets for parties to meet payment or delivery obligations and for collateral transfers (a ‘heavy chain’).

Within this broad distinction, and in the context of public ledgers, there are a number of different consensus mechanisms that could be used within the design of a distributed ledger (for example, ‘proof of work’ and ‘proof of stake’), within each of which are several different sub-categories.

Again, these guidelines are intended to be agnostic as to the particular consensus mechanism used. However, it is a feature of many types of consensus mechanism that exist within public distributed ledgers that incentive fees are paid to block ‘miners’. If such fees were to be a feature of the consensus mechanism used in the design of a distributed ledger onto which parties sought to develop a smart derivatives contract, there would be a question about whether the parties would want to make the payment of such fees a term of the contract or whether they would want to deal with this outside of the contract.

<sup>4</sup> [www.isda.org/category/infrastructure/market-infrastructure-technology/](http://www.isda.org/category/infrastructure/market-infrastructure-technology/)

<sup>5</sup> Version 1.0 of the ISDA CDM models the observation of a rate reset on an interest rate swap and calculation of relevant interest amounts, the payment amounts are also modelled ([www.isda.org/2018/06/04/the-isda-cdm-1-0/](http://www.isda.org/2018/06/04/the-isda-cdm-1-0/))

<sup>6</sup> FpML is an open-source standard for the exchange of information for the electronic dealing and processing of derivatives: <https://www.isda.org/category/infrastructure/fpml/>



These guidelines do not consider how the different characteristics of a 'permissioned' as opposed to a 'permissionless' distributed ledger might impact upon a smart derivatives contract.

It is also important to note that with heavy chain distributed ledgers, there may be conflict of law issues around the situs (ie, where the asset or property is treated as being located for legal purposes) of any assets native to the distributed ledger. These issues are beyond the scope of these guidelines.

## PRINCIPLES FOR THE DEVELOPMENT OF SMART DERIVATIVES CONTRACTS

In October 2018, ISDA and King & Wood Mallesons jointly published a whitepaper entitled *Smart Derivatives Contracts: From Concept to Construction*<sup>7</sup>. This paper explores the various possible points of connection between the technological and legal representation of transactions and examines, from a legal perspective, what is needed to apply smart contract technology to ISDA's documentation standards.

In doing so, the paper establishes four fundamental principles that should be considered in the development of smart derivatives contracts:

### 1. Smart derivatives contracts should be compatible with existing standards

It is important that smart derivatives contracts comply and are consistent with each of the different types of standard that are applicable to both smart contracts and derivatives contracts. These include regulatory, legal, commercial and technology standards.

These guidelines aim to support technology developers by promoting compliance with existing legal, regulatory and commercial standards in the derivatives industry, many of which are reflected within the existing ISDA documentation architecture.

### 2. Only those parts of a derivatives contract that are capable of being automated should be considered

In determining those parts of a derivatives contract that might be susceptible to automation, it is useful to distinguish between operational and non-operational clauses.

In the context of a legal agreement (and ISDA documentation), operational clauses generally embed some form of conditional logic – ie, that upon the occurrence of a specified event, or at a specified time, a deterministic action is required<sup>8</sup>. Non-operational clauses do not embed such conditional logic but relate to the wider legal relationship between the parties in some respect. Of course, it is possible that a particular clause may contain both operational and non-operational aspects. Therefore, categorizing individual clauses as operational or non-operational in nature may not always be straightforward.

Given their conditional logic, operational clauses may be relatively simple to express in a form that would allow for their effective automation. Conversely, some non-operational clauses may prove more resistant to automation.

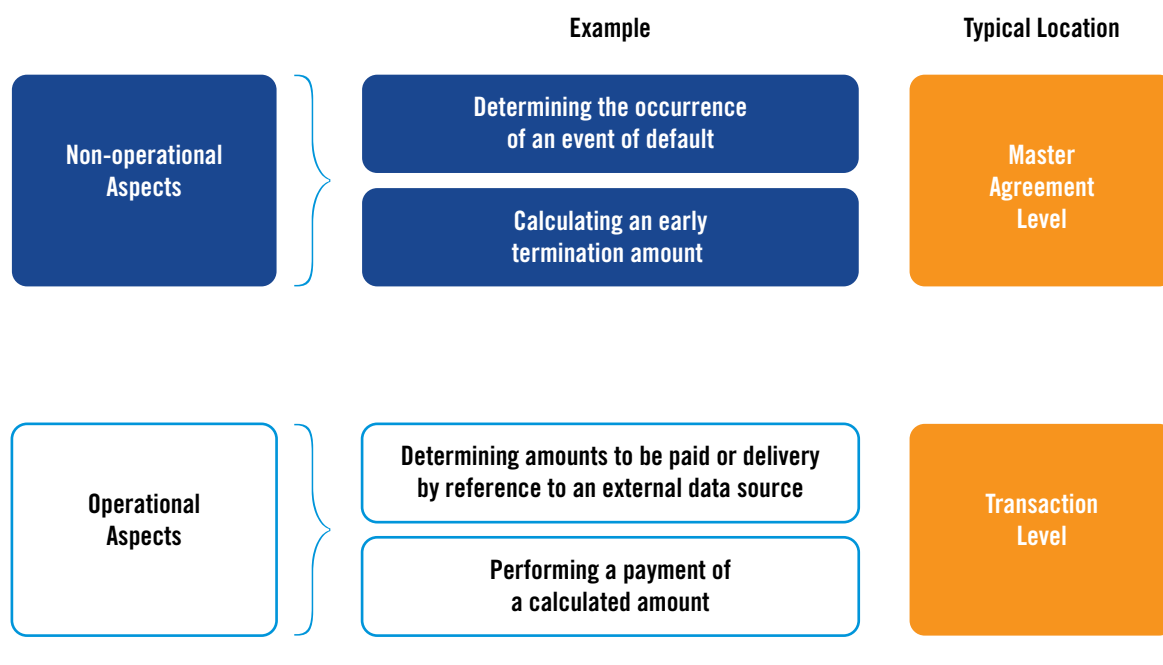
As illustrated in Figure 4, many of the non-operational clauses that exist within the ISDA documentation architecture are located within the ISDA Master Agreement<sup>9</sup>.

<sup>7</sup> [www.isda.org/a/cHvEE/Smart-Derivatives-Contracts-From-Concept-to-Construction-Oct-2018.pdf](http://www.isda.org/a/cHvEE/Smart-Derivatives-Contracts-From-Concept-to-Construction-Oct-2018.pdf)

<sup>8</sup> ISDA and Linklaters LLP, *Smart Contracts and Distributed Ledger – A Legal Perspective* (August 2017), [www.isda.org/a/6EKDE/smart-contractsand-distributed-ledger-a-legal-perspective.pdf](http://www.isda.org/a/6EKDE/smart-contractsand-distributed-ledger-a-legal-perspective.pdf)

<sup>9</sup> Further discussion on the complexity of the temporal aspects of the ISDA Master Agreement can be found here: *Temporal Aspects of Smart Contracts for Financial Derivatives*, C. D. Clack and G. Vanca. 2018. ([arxiv.org/abs/1805.11677](https://arxiv.org/abs/1805.11677))

Fig 4: Automation of ISDA Documentation



It would therefore appear that the immediate opportunities for automation are more likely to be found at the individual transaction level. However, the terms of an individual transaction may be affected by provisions that exist elsewhere within the overall documentation framework. It is important to bear in mind that those parts of a transaction that are automated will ultimately need to work with the legal provisions of the ISDA Master Agreement and associated documentation.

### 3. Effective automation should be based on legal validation

It is important to ensure lawyers are able to validate that the legal effect of any coded or automated provision is certain, and that the legal effect of the code aligns with the intended legal effect of the contract.

This is particularly important in the derivatives market, given that derivatives contracts are often used in connection with each other. For example, one derivatives contract may be used to hedge the financial exposure created by another. An inability to validate the legal effect of a smart derivatives contract may therefore introduce increased risks for the parties and the wider derivatives market.

In the context of derivatives contracts, legal validation might be more readily achieved with respect to those clauses that are more operational in nature. For example, the calculation of a payment obligation as currently expressed within an ISDA definitions booklet may be expressed in a more formal manner at some point in the future, with its legal effect validated by lawyers with knowledge of the definitions.

The legal validation process is likely to prove more challenging when analyzing those provisions that are more complex or that require some degree of subjective interpretation (eg, a provision that requires a party to act in a commercially reasonable manner).

#### 4. **Only those parts of a derivatives contract where there exists sufficient benefit in automating should be considered for automation**

Not all of the provisions of the ISDA documentation that can be effectively represented in automatable form should be automated.

While smart derivatives contracts have the ability to improve the efficiency of the derivatives market by automating the performance of certain events and obligations, the vast number of complex and interdependent permutations that need to be considered for some provisions – for example, determining when certain types of event of default have occurred – may mean it is never efficient or desirable to automate these parts of the contract, even if it were technically possible to do so.

Adherence to these principles in the development of smart derivatives contracts will likely require the development and establishment of new legal, documentation and product standards. This will be important in supporting the development and adoption of new technologies in the derivatives market and in ensuring legal certainty in their use.

A key consideration is what is meant by ‘automation’. Not all provisions are operational in nature. Some provisions, such as those containing client reference information, are static. Consideration should also be given to the existence of static legal agreement data within the contract. For example, even though the provision of representations may not involve transfers of value between the parties, they are in fact required to be tracked and focused on for a variety of regulatory compliance, tax and other purposes.

Including representations and other ‘non-actionable’ provisions within the smart derivatives contract could be an important step toward larger-scale adoption and industrialization of smart contracts and DLT in the derivatives industry. For these purposes, the development of underlying legal data standards will be important<sup>10</sup>.

It is crucial that both legal professionals and technology developers play a role in developing these standards and their application to derivatives contracts.

<sup>10</sup> This is the core objective of the ISDA clause library project: [www.isda.org/2018/10/23/isda-clause-library-project-webinar/](http://www.isda.org/2018/10/23/isda-clause-library-project-webinar/)

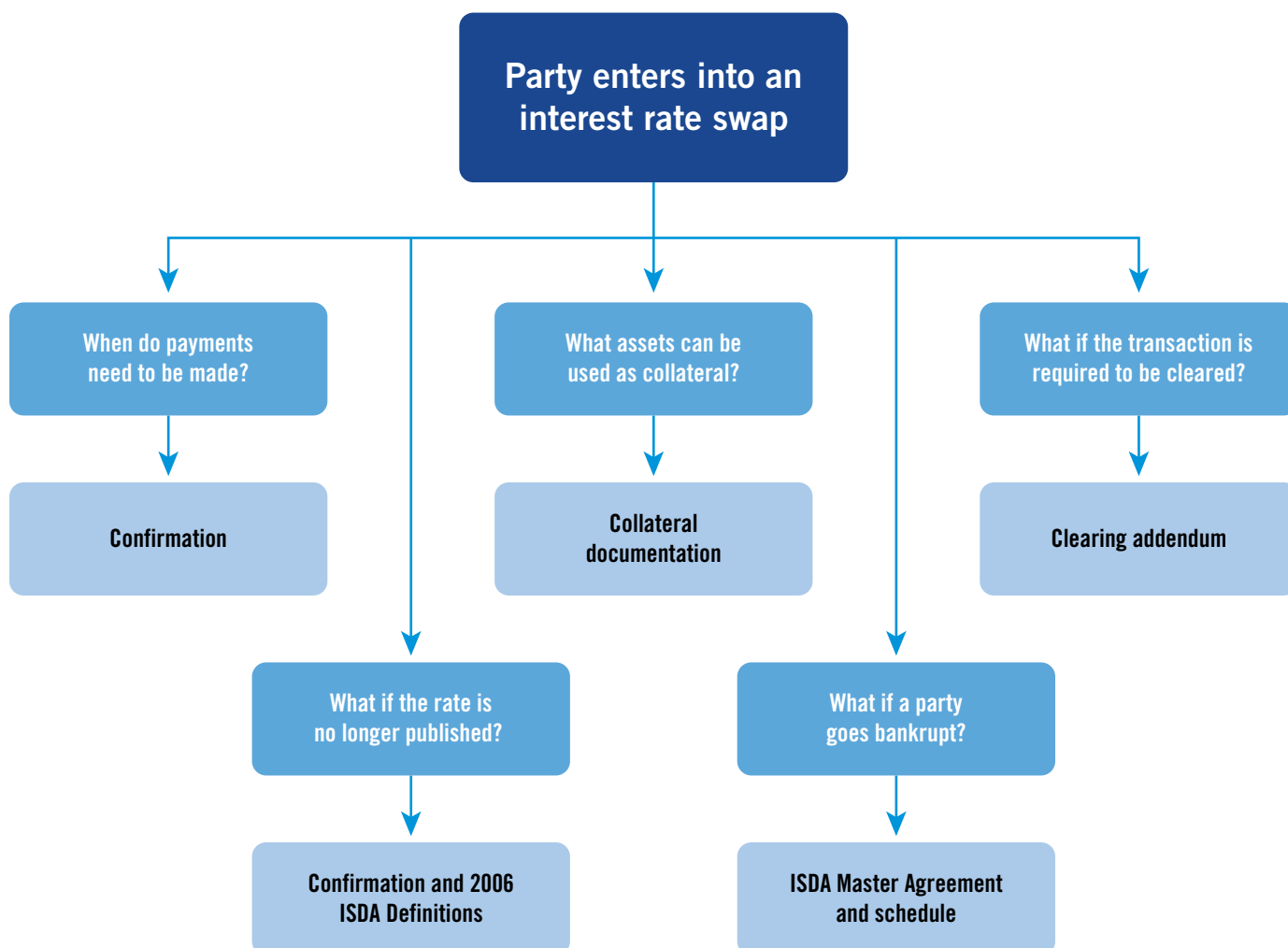
## ISDA DOCUMENTATION ARCHITECTURE

### Overview

The ISDA documentation architecture assists derivatives market participants by providing a relatively high degree of contract standardization. This creates a solid foundation for the future development of technology enabled solutions aimed at creating efficiencies and cost savings in the derivatives market.

However, while the documentation itself is largely standardized, certain contracts can often be heavily negotiated and customized. As illustrated in Figure 5, the contract relating to transactions between two parties is often represented by a combination of documents. These documents are highly interdependent. It is not possible to fully understand a transaction or the overarching contractual relationship between the parties simply by looking at one document.

**Fig 5: Interdependency of Documentation**

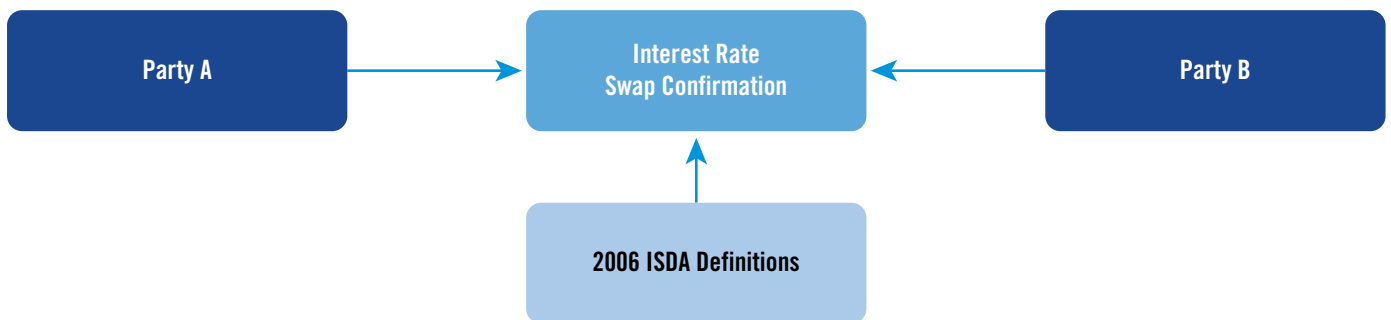


To fully understand the terms of a transaction and how external events may impact upon it, it is important to look at the various levels of obligation that exist within the ISDA documentation architecture, the key documents involved and how they interrelate.

## Transaction Level

At the simplest level, parties enter into transactions with each other (see Figure 6). The terms relating to individual transactions are contained in the trade confirmation for that transaction. The confirmation to a transaction sets out the relevant economic terms of the transaction entered into.

**Fig 6:** Transaction Level

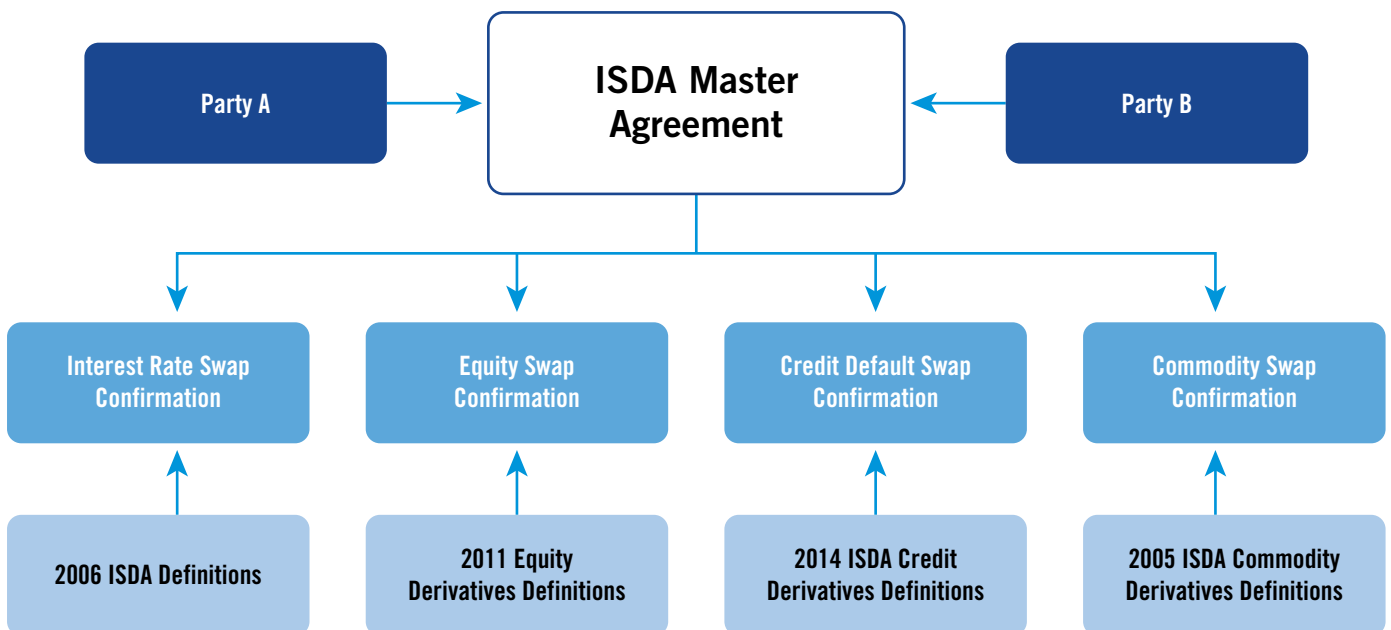


Confirmations will typically incorporate asset-class-specific definitions contained across the suite of definitional booklets published and maintained by ISDA. These provide a library of further terms that are specific to a particular asset class or market.

## Master Agreement Level

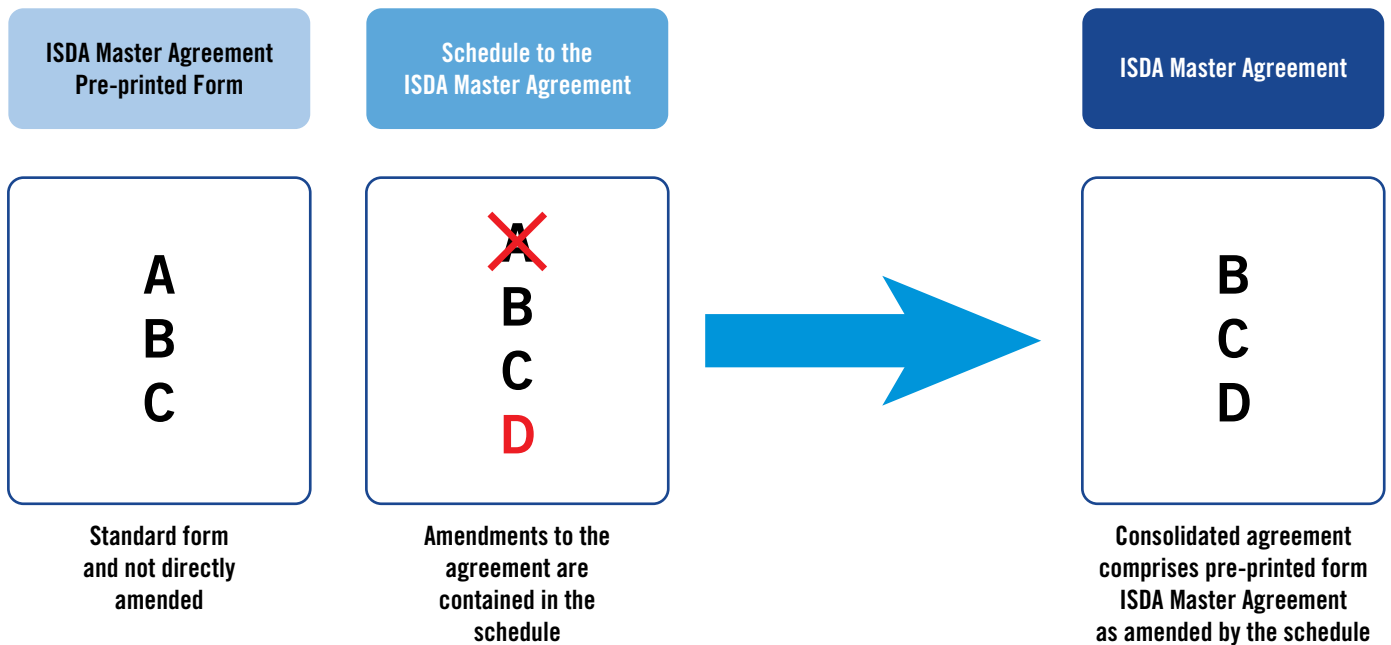
Central to the ISDA documentation architecture is the ISDA Master Agreement. This is the standard contract that is used to govern all transactions entered into between parties. Transactions across different asset classes and products may be entered into under the same ISDA Master Agreement (see Figure 7).

**Fig 7: Master Agreement Level**



The ISDA Master Agreement is produced in a standard, pre-printed form. However, this is not to say that parties are required to enter into identical, standardized terms in order to participate in the derivatives market. Depending on the nature of the counterparty and the types of transaction that the parties intend to enter into, it will be important for parties to ensure that the contractual terms they have in place with their counterparties are appropriate and sufficient to mitigate against the types of risk that might arise during the course of a trading relationship.

It is possible to customize the ISDA Master Agreement (and associated documentation) without undermining the overall ISDA documentation framework. Any changes can be made in the schedule to the ISDA Master Agreement if the changes are intended to apply to all transactions (see Figure 8). Where specific changes are required in respect of individual transactions, these can also be made in the relevant confirmation.

**Fig 8:** Schedule to the ISDA Master Agreement

The schedule is appended to and forms part of the ISDA Master Agreement. It allows parties to:

- Make certain elections contemplated by the ISDA Master Agreement;
- Amend existing provisions of the ISDA Master Agreement; and
- Include additional provisions.

Depending on counterparty type and product complexity, certain contracts may be subject to a high degree of customization.

A future supplement to these guidelines will cover the ISDA Master Agreement in more detail.



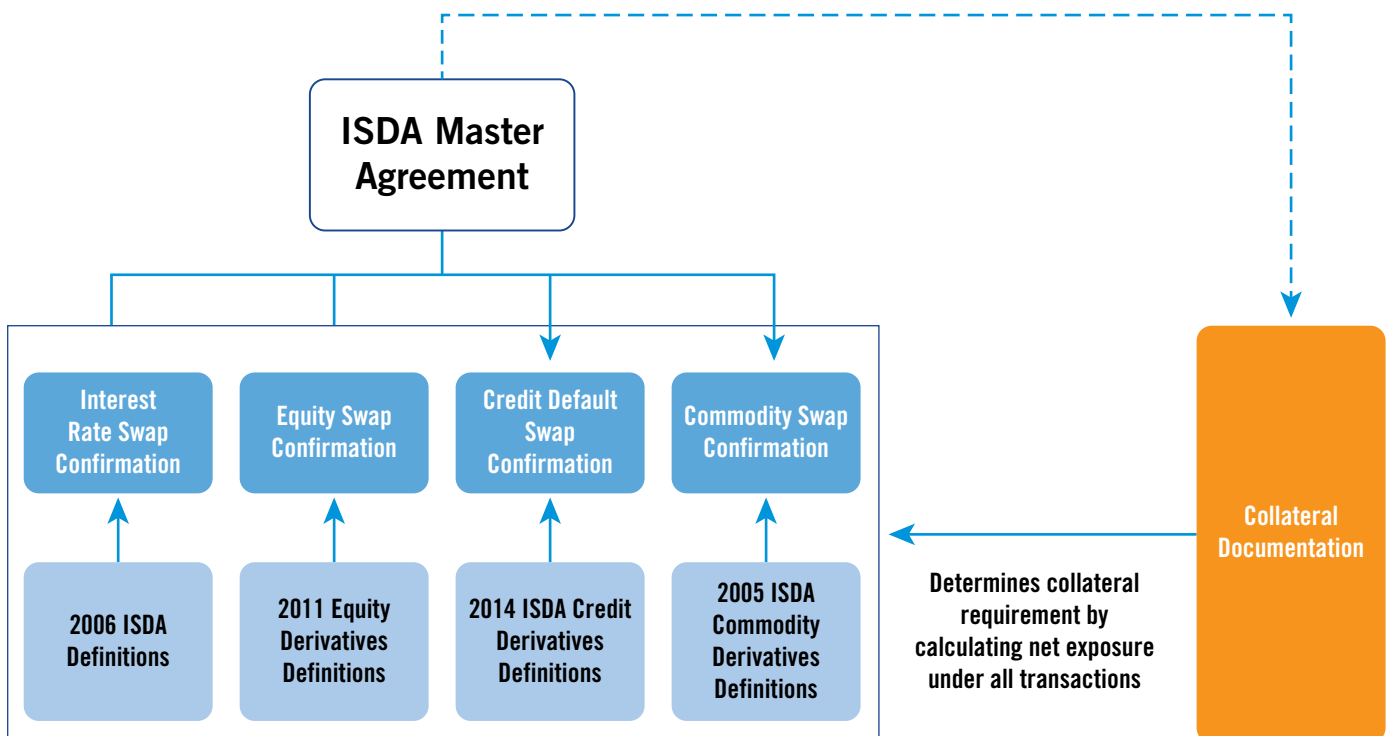
## Collateralized Transactions

Parties may agree (or may be required by regulation) to provide collateral assets to secure their payment or delivery obligations under the ISDA Master Agreement. Parties may use standard-form credit support documentation published by ISDA to establish:

- Which assets can be provided as collateral;
- How to determine the amount of assets to be transferred on a given day;
- How disputes and defaults with respect to collateral transfers are handled.

The collateral requirements are typically determined by reference to the parties' net exposure under each of the transactions entered into under their ISDA Master Agreement, as calculated on a mark-to-market basis and subject to applicable thresholds or other relevant conditions agreed between the parties.

**Fig 9: Collateralized Transactions**



It is important to note that Figure 9 is intended to represent a highly simplified example of a standard collateral documentation structure. Regulations requiring the exchange of collateral between parties have resulted in an increase in the use of third-party custodians and the number and complexity of collateral documents used in a typical trading relationship.

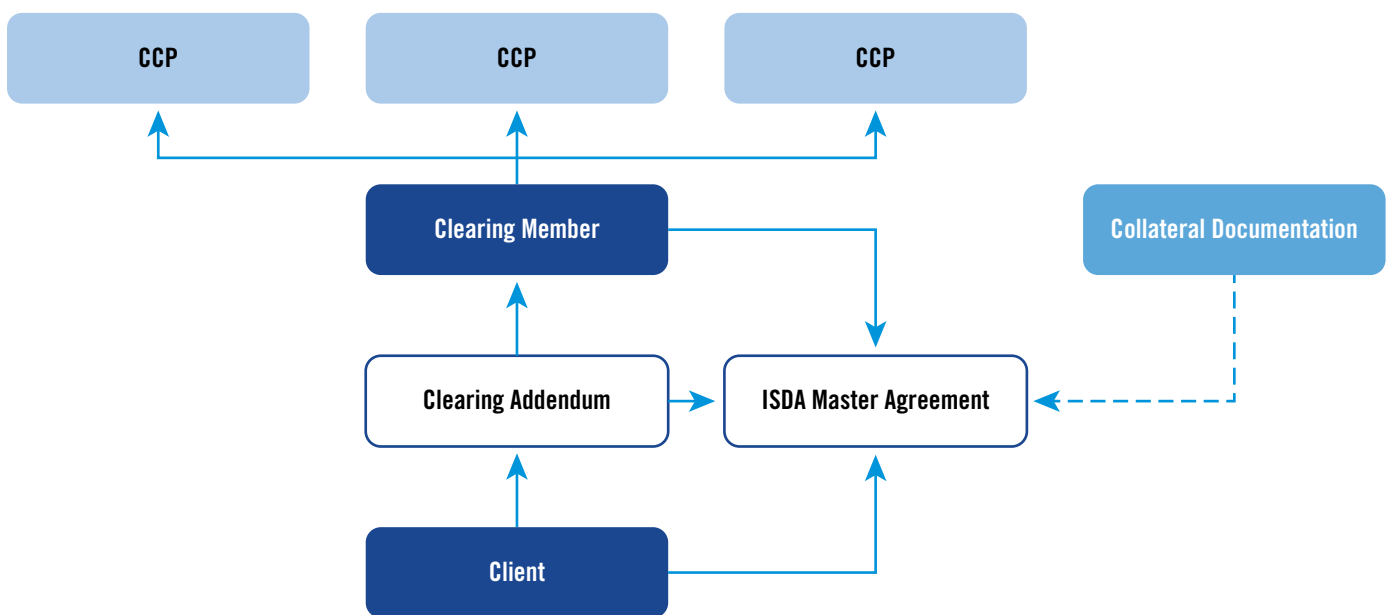
A future supplement to these guidelines will cover collateral documentation in more detail.

## Cleared Transactions

New regulatory requirements to clear certain types of transaction with a central counterparty (CCP) have resulted in some significant changes to derivatives documentation.

Cleared transactions will generally be entered into using some form of clearing agreement. The clearing agreement is intended to supplement the ISDA Master Agreement between the parties, and typically takes the form of an addendum to it (see Figure 10).

**Fig 10: Cleared Transactions**



The clearing agreement operates by amending the underlying ISDA Master Agreement by:

- Incorporating the CCP's rulebook into the contractual agreement between the parties.
- Modifying or removing certain of the existing contractual provisions to facilitate clearing of transactions (for example, by modifying the termination and close-out process to preserve the operation of the CCP's default management process); and
- Ensuring the terms of the clearing documentation take precedence in the event of any inconsistencies.

It is important to note that different clearing models exist in different jurisdictions, and the above example may not accurately represent the documentation structure or content that might be used in all scenarios.

While there is a high level of standardization across different forms of clearing agreement, these documents may also be customized. For example, CCPs may have different rules governing how individual contracts can be amended. Clearing documentation therefore introduces additional complexity into the overall ISDA documentation structure.

## Ancillary Documentation

Parties may further customize their trading documentation through the use of a range of ancillary documents. These include, but are not limited to, the documents listed below.

### Protocols

Where standardized changes to the terms governing transactions or the overall contractual relationships between parties to the ISDA Master Agreement are required, parties may be able to use a form of multilateral amendment published by ISDA (known as a 'protocol') to facilitate these changes. Parties wishing to amend their contracts using a protocol can adhere by submitting an adherence letter to ISDA that sets out the terms of their adherence and makes any elections that might be required as part of the adherence process.

Adherents to ISDA's protocols agree to amend the contractual terms of their transaction(s) or relationship between each of their counterparties that also adhere to the protocol. The benefit of adhering to a protocol is that it reduces costly and time-consuming bilateral negotiations with multiple counterparties.

### Amendment Agreements

From time to time, parties may elect to amend the terms of a transaction or the terms of an ISDA Master Agreement by entering into a form of amendment agreement. The terms of an amendment agreement may specify changes to specific transactions, all transactions or to the parties' overall contractual relationship.

### Master Confirmations

Parties may agree that all transactions referencing a certain asset, or which have certain characteristics, should be subject to broadly similar terms (including economic terms). They may therefore agree to enter into a 'master confirmation' agreement, the terms of which would be applicable to all transactions identified as being subject to its terms.

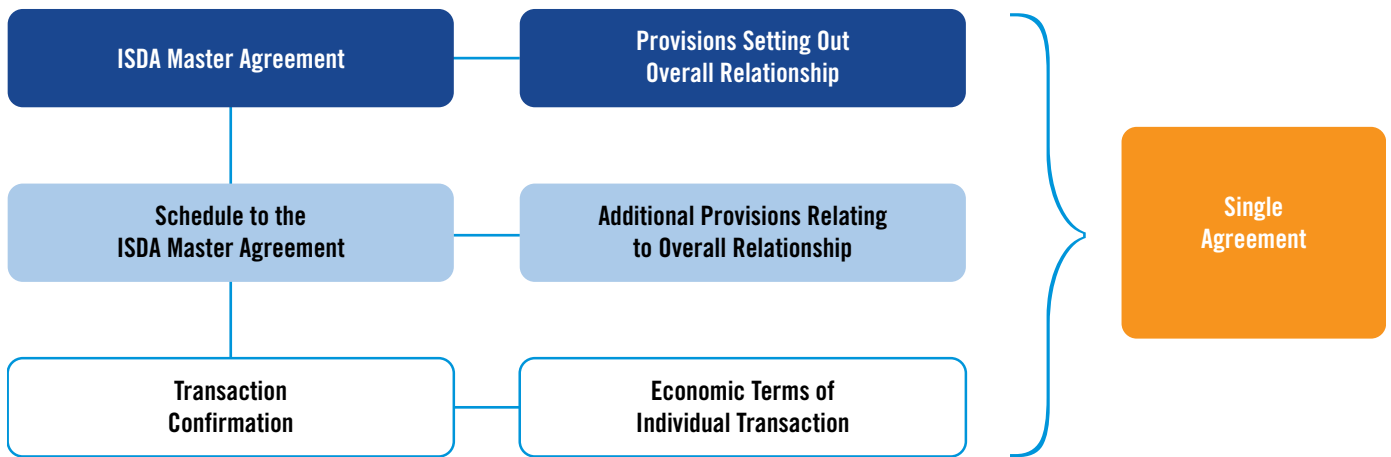
### Side Letters

Parties may agree to address certain issues relating to their overall contractual relationship in a side letter rather than within the schedule to the ISDA Master Agreement. Where parties agree, it may be that the terms of the side letter are construed as forming part of the overall ISDA Master Agreement, although that is not always the case.

## THE SINGLE AGREEMENT

The ISDA Master Agreement (including the schedule) and each confirmation entered into under it together form a 'single agreement' between the parties (see Figure 11).

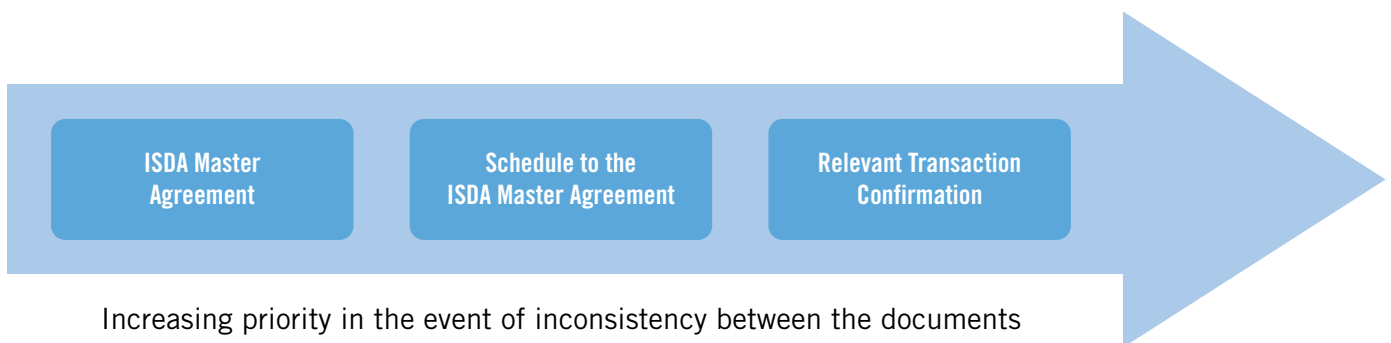
**Fig 11:** The Single Agreement Architecture



The single agreement approach ensures that each party has a single legal relationship and financial exposure to its counterparty. This provides operational benefits (for example, through the netting of payment obligations) and mitigates credit risk as parties should be able to terminate all transactions entered into with a particular counterparty upon, for example, the occurrence of an event of default.

In such cases, priority rules will apply. If a contractual term has been included in a transaction confirmation that conflicts or is inconsistent with a term in the ISDA Master Agreement (or schedule), then the relevant term in the transaction confirmation will take precedence (see Figure 12).

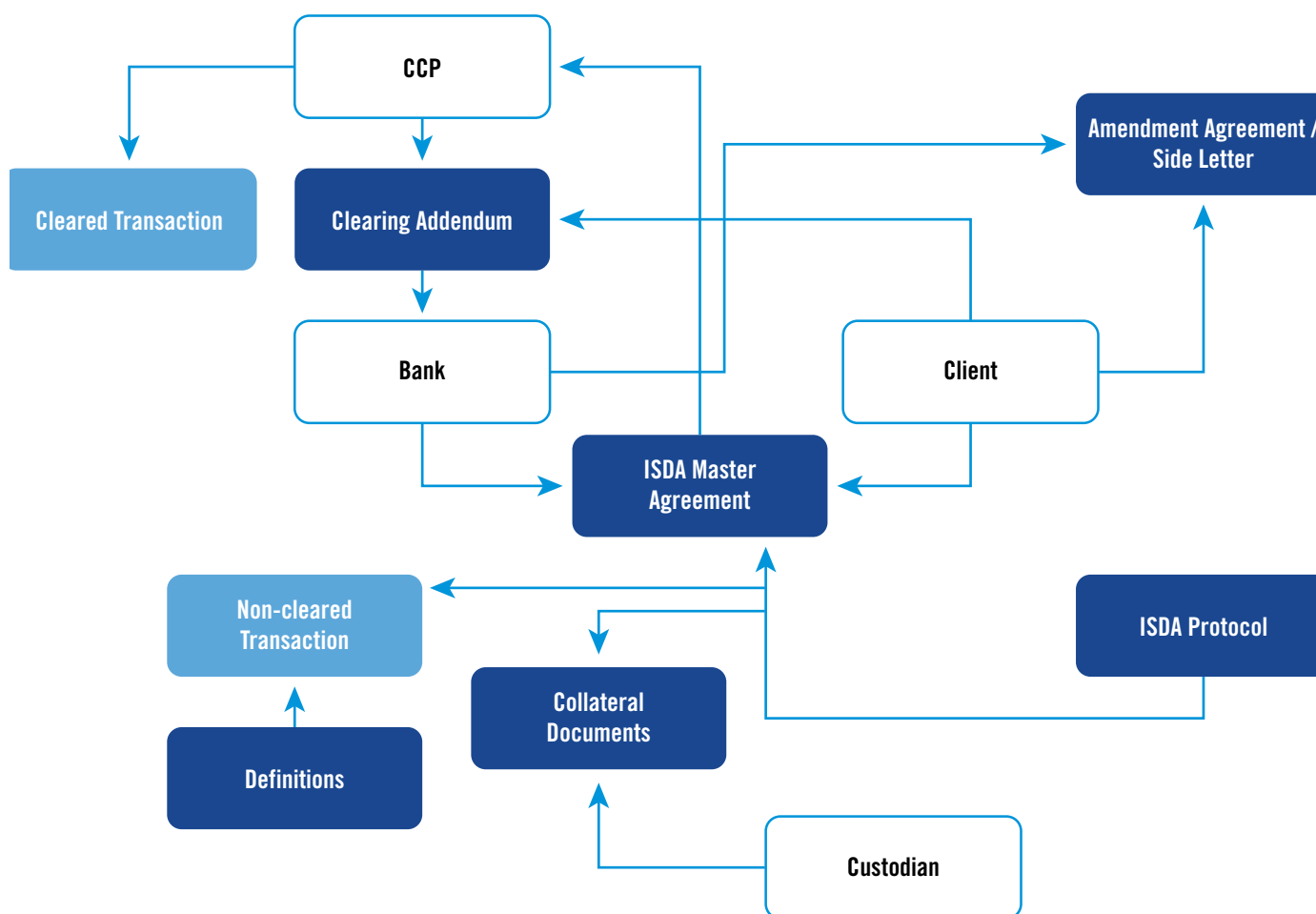
**Fig 12:** Priority in the Event of Inconsistency



## CONSIDERATIONS FOR TECHNOLOGY DEVELOPERS

The ISDA documentation architecture is complex. Trying to identify each of the relevant contractual terms and documents that apply to a particular transaction can be challenging. Most trading relationships comprise not only the ISDA Master Agreement and the transaction confirmations but also collateral documentation, tri-party agreements, protocols, amendment agreements, clearing documentation and other transaction-specific documentation such as definitional booklets and market-specific side letters. All of these are capable of customization and amendment, making it even more difficult to identify and compile the complete legal agreement.

**Fig 13:** Example of Documentation Complexity



The application of technology solutions to ISDA documentation raises some interesting questions about the precise boundaries of the single agreement architecture.

One of the most fundamental questions is whether computer code might ultimately form part of the single agreement. This may not be entirely relevant where the code does not form part of the contract itself. However, where certain provisions of the contract are written in code, it will be important to ensure that it is clear how these interact with other provisions within the single agreement architecture.

As noted above, in the event of inconsistency between documents, individual transaction terms will normally take precedence with respect to the transaction in question. Given it is at the transaction level where the most immediate opportunities for automation are likely to arise, it will be important to ensure there is some means for ensuring legal validation of the code within the contract and an appropriate dispute resolution mechanism for resolving any conflicts.

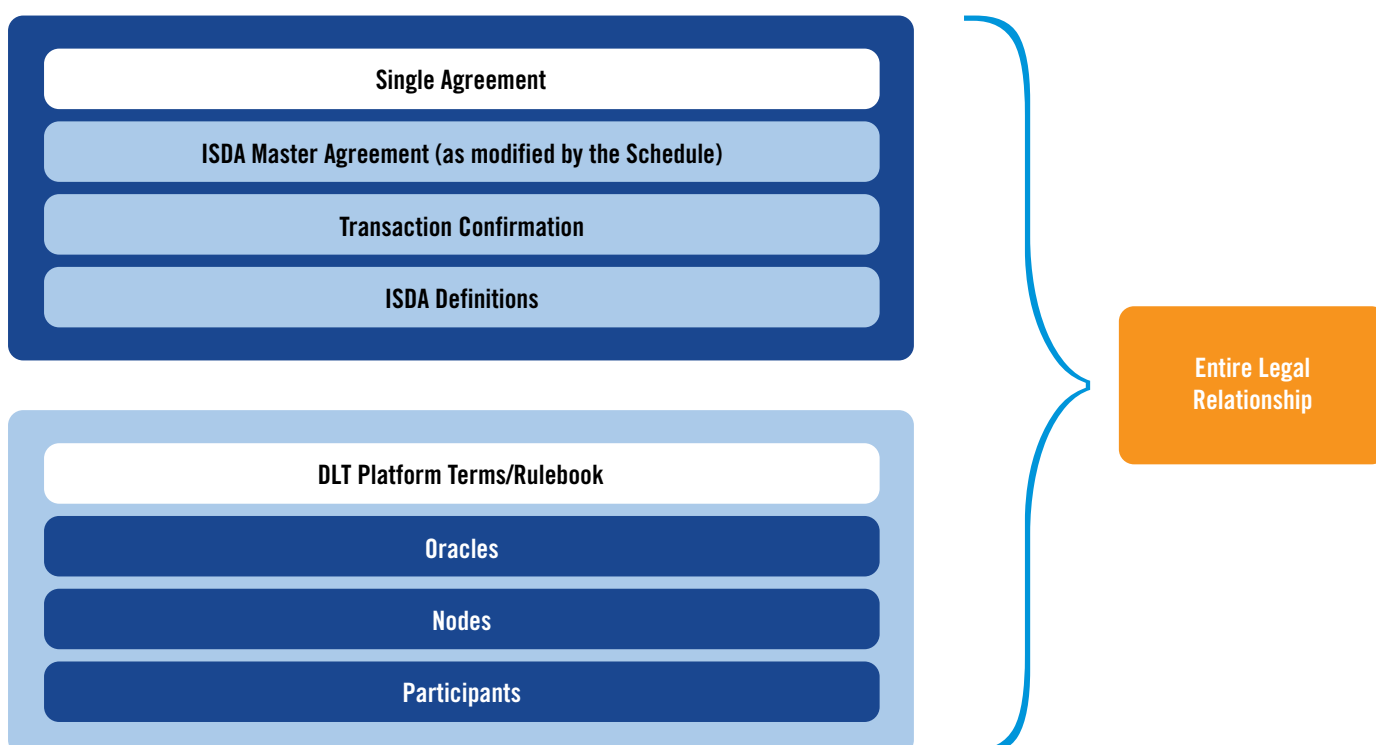
Where the technology application is designed to record transaction data, it will be important to consider whether this data or any data outputs (for example, settlement records) should be considered part of the single agreement. A potential consequence of data sitting outside the single agreement construct is that it may not be admissible for construction of the overall legal and contractual relationship in the event of a dispute or close out.

It may therefore be necessary for the legal documentation to expressly declare that the code forms part of the single agreement as created by the ISDA documentation. Consideration should be given to whether this would be limited to records generated by operation of the code, or whether it should actually attempt to capture all actions performed by the code. This analysis is likely to prove complex and should not be performed without due legal consideration and advice on the potential impact on the validity and enforceability of the ISDA Master Agreement.

Understanding and establishing the interaction between the single agreement created by the ISDA documentation architecture and other documentation relating to, for example, the operation of a platform or any external data sources that are used in performing calculations or making determinations under the contract will also be important.

While the operational aspects of each will likely overlap, it will be important to ensure that the legal relationships created are distinct and well understood by both parties. The scope of the platform rulebook or agreement will likely depend on the nature of the activity that is being conducted on it.

**Fig 14: Interaction Between Different Agreements**



For example, a particular smart derivatives contract model may involve the use of external data sources or ‘oracles’. These oracles may interact with a DLT platform and be utilized to the extent instructed by the terms of the ISDA Master Agreement (or by the terms of a transaction governed by it). The parties’ respective legal rights and obligations with respect to any issues arising out of the operation of the oracle may, depending on the nature of the issue, be governed by either the ISDA Master Agreement or any rule book or agreement under which the parties have agreed to utilize the platform.

In designing technology enabled solutions for the trading or processing of derivatives, technology developers should work with their legal advisors to understand the various points of connection between each of the documents, take account of legal relationships created with any third parties, and consider how the solution may impact upon the entirety of the contractual relationship.

These are questions of fundamental importance that will likely require further collaborative work between technology developers and legal professionals. ISDA hopes these guidelines and future supplements provide a useful basis for commencing this work.

## CONTRIBUTORS

ISDA greatly appreciates the efforts of everyone who contributed to preparation of these ISDA Legal Guidelines for Smart Derivatives Contracts.

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