

# Statement of Compliance of IOSCO Benchmark Principles – Self Attestation

## Introduction

The Board of the International Organization of Securities Commissions (“IOSCO”) published its final report entitled “Principles for Financial Benchmarks” on 17 July 2013 (the “Final Report”). The objective of the Final Report is to create an overarching framework of principles for benchmarks used in financial markets. The Final Report sets out nineteen principles (the “IOSCO Principles”) which can be viewed as a set of recommended practices to be implemented by administrators of, and submitters to, financial benchmarks. IOSCO has recommended that administrators of benchmarks publicly disclose the extent of their compliance with the IOSCO Principles on an annual basis.

CanDeal DNA creates a number of bond pricing services utilizing a hierarchy of inputs including transactions, multi-dealer pre-trade pricing, industry fixings and reference data to deliver composite prices, evaluated prices and curves. This pricing is used in third party indexes, independent pricing verification services, fund pricing as well as market risk calculations.

Given the reliance on and importance of the CanDeal DNA prices as inputs into benchmark indexes and bank and trading book utilization, we have utilized the IOSCO benchmark principles to ensure governance, oversight and controls adhere to global best practices.

## CanDeal Management’s Statement of Adherence

We are responsible for identification of the control objectives for our business and the design and operation of CanDeal DNA’s control procedures to effectively address the principles of the IOSCO Principles for Financial Benchmarks (‘IOSCO Principles’) for administration of the CanDeal DNA Composite pricing for bonds, Evaluated pricing for bonds and related methodologies.

In our attached Statement of Compliance with IOSCO Principles, we set out a description of the relevant frameworks and control procedures together with the related control objectives and requirements of the IOSCO Principles as at January 31, 2022 and confirm that The Statement of Compliance with IOSCO Principles describes fairly the control procedures which were in place and the control procedures are suitably designed such that the specified control objectives, including the provisions of the IOSCO Principles, can be achieved and to our knowledge and belief the described control procedures were complied with.

Signed on behalf of CanDeal DNA

Andre Craig  
President, CanDeal DNA



## CanDeal Group Independent Compliance Review

Our work was based upon obtaining an understanding of the control procedures as described by the Division Head of CanDeal DNA and as provided in written materials. We evaluated such data sources against the Statement of Compliance with the IOSCO Principles to form our conclusion.

We have carried out our engagement in respect of CanDeal DNA's control procedures that relate to compliance with the IOSCO Principles. This report covers the description and design effectiveness of control procedures, related to the application of the requirements of the IOSCO Principles for CanDeal Composite pricing and Evaluated pricing services for Canadian bonds as at January 31, 2022.

The objective of our engagement was to perform an arm's length review and assessment of such procedures on a sample basis so as to obtain information and explanations which we consider necessary in order to provide us with sufficient appropriate evidence to express our conclusion.

Based on the results of our procedures, nothing has come to our attention to indicate that the Company's Statement of Compliance with the IOSCO Principles is not fairly stated as at January 31, 2022, in all material aspects.

Signed on behalf of CanDeal Group Compliance

Ahsan Ahmed  
Chief Compliance Officer, CanDeal Group Inc.



# CanDeal Data & Analytics (DNA)

## IOSCO Principles for Financial Benchmarks: Assessment Report

### Introduction

The Board of the International Organization of Securities Commissions (“IOSCO”) published its final report entitled “Principles for Financial Benchmarks” on 17 July 2013 (the “Final Report”). The objective of the Final Report is to create an overarching framework of principles for benchmarks used in financial markets. The Final Report sets out nineteen principles (the “IOSCO Principles”) which can be viewed as a set of recommended practices to be implemented by administrators of, and submitters to, financial benchmarks. IOSCO has recommended that administrators of benchmarks publicly disclose the extent of their compliance with the IOSCO Principles on an annual basis.

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Given the reliance on and importance of the CanDeal DNA prices as inputs into benchmark indexes and bank and trading book utilization, we have utilized the IOSCO benchmark principles to ensure governance, oversight and controls adhere to global best practices.

The follow report outlines CanDeal DNA’s response in terms of how it meets the objectives of the IOSCO Principles.

### 1. Governance:

- A Benchmark should have appropriate governance arrangements in place to protect the integrity of the Benchmark and to address conflicts of interests.
  - a. Overall Responsibility of the Administrator –
    - i. CanDeal DNA discloses its methodologies via public website
    - ii. Methodologies reflect the hierarchy of sources used in calculations
    - iii. Pricing Committee and Industry feedback on methodologies and price challenges are operationalized and vetted to ensure arm’s length judgement and avoidance of conflicts of interest
    - iv. Key controls are in place to ensure integrity of data, governance and full audit capabilities
  - b. Oversight of third parties



- i. All third parties have discrete bi-lateral agreements
  - ii. Dealer contributions conform to industry standard data specification and data is validated semantically and syntactically prior to inclusion in calculations
- c. Conflicts of Interest
  - i. CanDeal DNA operations are discrete from any other related entities
  - ii. All dealer source data is only available with the CanDeal DNA operation
  - iii. All third party input sources have discrete bi-lateral agreements in place
  - iv. CanDeal DNA utilizes input and feedback via Pricing Committees, Price Challenges and client feedback where all reflect against actual transaction data and/or best industry practices with CanDeal DNA retaining full discretion
- d. Control framework for Administrators
  - i. CanDeal DNA has an internal KCI dashboard which flows into the CanDeal group ERM program
  - ii. Should any regulatory body require this framework it is available
  - iii. The Price Challenge process provides detailed reporting and is the channel for any 'whistle blowing' should there be anonymity (Note: this can and will be made more apparent in 2022)
  - iv. Experts occupy all key roles including quants, data governance, reference data, operations and support
  - v. All submitters adhere to a specification and validation for quality and scope of coverage as well as timeliness
  - vi. There is adequate representation of sources comprising all Canadian banks as well as 4 non-bank dealers
  - vii. Feedback is provided to all sources including third party reference data vendors identifying any and all erroneous, quality and scope deficiencies as identified in the validation and pricing process and via external feedback
- e. Internal Oversight
  - i. Internal controls have been operationalized and vetted via independent Compliance office
  - ii. Should any deficiencies arise these will be reported daily to the Head of CanDeal DNA and if required will be addressed with the appropriate internal and external parties
  - iii. A formal industry Pricing Committee reviews the methodologies and any changes
  - iv. Third party index provider(s) as well as their advisory committee also reviews the methodologies
  - v. Other third party benchmark administrators have also reviewed the IOSCO principles followed by CanDeal DNA and are satisfied
  - vi. Submitter code of conduct is addressed via bi-lateral agreements, adherence to data specifications and validations, price challenge reporting back to the source as well as quality, scope of coverage and timeliness reporting back to the submitter



## 2. Quality of the Benchmark

- a. Benchmark design
  - i. The design is based on extensive industry consultation including sell-side, buy-side, index providers, global data vendors and discussions with domestic regulators. The intent through the methodology design and hierarchy is to generate prices that most closely match where the market is at a point in time. Using contributor pricing data and comparing day over day to the where securities actually traded provides ongoing fidelity. Emphasis on bona-fide observations from multiple sources.
- b. Data sufficiency
  - i. All Canadian banks' trading and pricing submissions are included in the calculations. While the Canadian banks generate the majority of trades, liquidity and pre-trade data other dealers are included in sub-sets of security pricing with regional and bond type specialization. These dealers are currently being migrated to the input specification standards and efforts are underway to collect their respective trade data to more fully validate the quality and scope of coverage with the intent to more broadly include their inputs.
- c. Hierarchy of data inputs
  - i. The methodologies take a waterfall approach. Transaction data is used to validate the quality of each dealer's price where there are volumes (i.e. if a dealer has traded at or near the trading price on an ongoing basis they will be preferenced over another dealer who has not traded or traded outside the vwap of trades for the day in that particular security). A Trade class analytic is used to apply a hierarchy to identify the number of contributors (and contributors who participate in trades) – number of contributors with less/illiquid volumes – minimum 3 contributors (i.e. quorum) – below 3/single dealer. These composite prices are identified respectively. Evaluated prices using expert judgement are also generated using curves where there is sufficient data points including sector and rating curve data and are also identified as evaluated prices. Additionally, spread based pricing is generated where there are very illiquid securities and/or where there is limited to no sector or ratings data.
- d. Transparency of methodology
  - i. Methodologies including the hierarchy of inputs and trade class analytic are all posted on the [www.candealdna.com](http://www.candealdna.com) website.
- e. Periodic review
  - i. Periodic and ongoing reviews occur through the external Pricing Committee forums and feedback, daily price challenges where dealer contributors are engaged as well as third party reference data providers when appropriate, and as fixings or sector/rating data challenges which may impact the approach such as curve based vs spread based.



- ii. Additional ongoing reviews are undertaken to evaluate the quality of third party reference data and this quality is ranked using a priority rule set. Ex. Should a ratings agency change a rating vs another, timeliness of changes, sectors and peer placements vs. how domestic dealers apply sectors and ratings.

### 3. Quality of Methodology

- a. Content of methodology
  - i. The methodologies are available publicly on the [www.candealdna.com](http://www.candealdna.com) website as are the product descriptions. Additionally ,our Customer Support, Price Challenge team, Product Experts and Quants are available to answer questions.
- b. Changes – N/A
  - i. Extensive internal procedures exist to ensure procedures and policies are adhered to and audit trail of any changes are recorded.
  - ii. While no material changes to methodologies have occurred, we expect changes to any pricing, cadence of delivery, changes to inputs etc. will be communicated.
  - iii.
- c. Submitter code of conduct
  - i. All Contributors of trade data adhere to the scope and quality in the same manner as provided to the Market Regulator.
  - ii. All Contributors adhere to a standard data specification and contributions are validated syntactically and semantically validated. Any errors and/or omissions are reported back.
  - iii. Contributors each sign a bi-lateral Contribution agreement indicating their requirement to provide selected sets of security data in the scope, quality and cadence as outlined in the Schedules. This agreement outlines a positive obligation to do so with adequate reps and warrants.
  - iv. Each Contributor provides data independently and in confidence to ensure arm's length submissions.

### 4. Accountability

- a. Complaints process
  - i. There is a formal Price Challenge process and reporting for any complaints related to coverage, quality and/or timeliness.
  - ii. Each Client has an Account Manager should they wish to voice any complaints. There is also a front line Support Desk centralized phone and email available for queries and complaints.
  - iii. Should the need arise, there will be procedures to escalated to an Ombudsman.
- b. Audits
  - i. An annual report is performed which outlines the adherence to the IOSCO Principles followed, any deficiencies and plans to address. This is reviewed by an internal arm's length Chief Compliance Officer.



- ii. The self attestation of the above is made available on the [www.candealdna.com](http://www.candealdna.com) website.
  - iii. [candealdna.com](http://candealdna.com) website.
- c. Audit trail
  - i. All inputs from contributors, validations results and pricing calculations are saved and stored.
  - ii. The Price Challenge system also stores and classifies this information for investigations. Any and all updates to reference data system are verified and these are tracked via audit trail and time series. The rules and controls are also documented.
- d. Cooperation with regulatory authorities
  - i. The methodologies have been presented to local Market Surveillance and Securities Regulators.
  - ii. Any requests by regulatory authorities will be responded to on a reasonable basis.