

## **BY-LAW NO. 1**

A By-Law relating generally to the transaction of  
the business and affairs of **713571 ALBERTA LTD.**

### **CONTENTS**

<b><u>SECTION</u></b>	<b><u>SUBJECT</u></b>
One	Interpretation
Two	Business of the Corporation
Three	Directors
Four	Committees
Five	Protection of Directors and Officers
Six	Shares
Seven	Dividends
Eight	Meetings of Shareholders
Nine	Notices
Ten	Effective Date

IT IS HEREBY ENACTED as By-law No. 1 of **713571 Alberta Ltd.** (hereinafter called the "Corporation") as follows:

### **SECTION ONE** **INTERPRETATION**

#### **1.01**      **Definitions**

In the by-laws of the Corporation, unless the context otherwise requires:

"Act" means the Business Corporations Act of Alberta, and any statute that may be substituted therefor, as from time to time amended;

"appoint" includes "elect" and vice versa;

"articles" means the articles attached to the Certificate of Incorporation of the Corporation as from time to time amended or restated;

"board" means the board of directors of the Corporation;

"by-laws" means this by-law and all other by-laws of the Corporation from time to time in force and effect;

"meeting of shareholders" means any meeting of shareholders, including any meeting of one or more classes or series of shareholders;

"recorded address" means, in the case of a shareholder, his address as recorded in the securities register; in the case of joint shareholders, the address appearing in the securities register in respect of such joint holding or the first address so appearing if there are more than one; and, in the case of a director, officer, auditor or member of a committee of the board, his latest address as recorded in the records of the Corporation;

"signing officer" means, in relation to any instrument, any person authorized to sign the same on behalf of the Corporation by Section 2.03 or by a resolution passed pursuant thereto.

Save as aforesaid, words and expressions defined in the Act have the same meanings when used herein; and words importing the singular number include the plural and vice versa; words importing gender include the masculine, feminine and neuter genders; and words importing persons include individuals, bodies corporate, partnerships, trusts and unincorporated organizations.

#### **1.02                    Conflict with the Act, the Articles or any Unanimous Shareholder Agreement**

To the extent of any conflict between the provisions of the by-laws and the provisions of the Act, the articles or any unanimous shareholder agreement relating to the Corporation, the provisions of the Act, the articles or the unanimous shareholder agreement shall govern.

#### **1.03                    Headings and Sections**

The headings used throughout the by-laws are inserted for convenience of reference only and are not to be used as an aid in the interpretation of the by-laws. "Section" followed by a number means or refers to the specified section of this by-law.

#### **1.04                    Invalidity of any Provision of By-laws**

The invalidity or unenforceability of any provision of the by-laws shall not affect the validity or enforceability of the remaining provisions of the by-laws.

### **SECTION TWO** **BUSINESS OF THE CORPORATION**

#### **2.01                    Corporate Seal**

The corporate seal of the Corporation, if any, shall be in such form as the board may from time to time by resolution approve.

#### **2.02                    Financial Year**

The financial year of the Corporation shall end on such date in each year as the board may from time to time by resolution determine.

#### **2.03                    Execution of Instruments**

Deeds, transfers, assignments, contracts, obligations, certificates and other instruments shall be signed on behalf of the Corporation by two persons, one of whom holds the office of chairman of the board, president, vice-president

or director and the other of whom holds one of the said offices or the office of secretary, treasurer, assistant secretary or assistant treasurer or any other office created by by-law or by resolution of the board; provided that if the Corporation only has one director, that director alone may sign any instruments on behalf of the Corporation. In addition, the board may from time to time direct the manner in which and the person or persons by whom any instrument or instruments may or shall be signed. Any signing officer may affix the corporate seal to any instrument requiring the same.

**2.04      Banking Arrangements**

The banking business of the Corporation including, without limitation, the borrowing of money and the giving of security therefor, shall be transacted with such banks, trust companies or other bodies corporate or organizations as may from time to time be authorized by the board. Such banking business or any part thereof shall be transacted under such agreements, instructions and delegations of powers as the board may from time to time prescribe or authorize.

**2.05      Voting Rights in Other Bodies Corporate**

The signing officers may execute and deliver proxies and arrange for the issuance of voting certificates or other evidence of the right to exercise the voting rights attaching to any securities held by the Corporation. Such instruments, certificates or other evidence shall be in favour of such person or persons as may be determined by the persons executing such proxies or arranging for the issuance of voting certificates or such other evidence of the right to exercise such voting rights. In addition, the board or, failing the board, the signing officers may from time to time direct the manner in which and the person or persons by whom any particular voting rights or class of voting rights may or shall be exercised.

**2.06      Insider Trading Reports and Other Filings**

Any one officer or director of the Corporation may execute and file on behalf of the Corporation insider trading reports and other filings of any nature whatsoever required under applicable corporate or securities laws.

**2.07      Divisions**

The board may from time to time cause the business and operations of the Corporation or any part thereof to be divided into one or more divisions upon such basis, including without limitation, types of business or operations, geographical territories, product lines or goods or services, as the board may consider appropriate in each case. From time to time the board may authorize upon such basis as may be considered appropriate in each case:

- (a) the designation of any such division by, and the carrying on of the business and operations of any such division under, a name other than the name of the Corporation; provided that the Corporation shall set out its name in legible characters in all contracts, invoices, negotiable instruments and orders for goods or services issued or made by or on behalf of the Corporation; and
- (b) the appointment of officers for any such division and the determination of their powers and duties, provided that any such officers shall not, as such, be officers of the Corporation.

**SECTION THREE  
DIRECTORS**

**3.01      Number of Directors**

If the articles provide for a minimum number and a maximum number of directors, unless otherwise provided in the articles, the number of directors of the Corporation shall be determined from time to time by resolution of the shareholders.

**3.02**

**Calling and Notice of Meetings**

Meetings of the board shall be called and held at such time and at such place as the board, the chairman of the board, the president or any two directors may determine, and the secretary or any other officer shall give notice of meetings when directed or authorized by such persons. Notice of each meeting of the board shall be given in the manner provided in the Act to each director not less than forty-eight hours before the time when the meeting is to be held, provided that, if a quorum of directors is present, the board may without notice hold a meeting immediately following an annual meeting of shareholders. Notice of a meeting of the board may be given verbally, in writing or by telephone, telegraph or any other means of communication. A notice of a meeting of directors need not specify the purpose of or the business to be transacted at the meeting, except where required by the Act. Notwithstanding the foregoing, the board may from time to time fix a day or days in any month or months for regular meetings of the board at a place and hour to be named, in which case, provided that a copy of any such resolution is sent to each director forthwith after being passed and forthwith after each director's appointment, no other notice shall be required for any such regular meeting except where the Act requires specification of the purpose or the business to be transacted thereat.

**3.03**

**Place of Meetings**

Meetings of the board may be held at any place in or outside Alberta. A director who attends a meeting of directors, in person or by telephone, is deemed to have consented to the location of the meeting except when he attends the meeting for the express purpose of objecting to the transaction of any business on the grounds that the meeting is not lawfully held.

**3.04**

**Meetings by Telephone**

With the consent of the chairman of the meeting or a majority of the directors present at the meeting, a director may participate in a meeting of the board or of a committee of the board by means of telephone or other communication facilities that permit all persons participating in the meeting to hear each other. A director participating in such a meeting in such manner shall be considered present at the meeting and at the place of the meeting.

**3.05**

**Quorum**

The quorum for the transaction of business at any meeting of the board shall consist of two directors or such greater or lesser number of directors as the board may from time to time determine, provided that, if the board consists of only one director, the quorum for the transaction of business at any meeting of the board shall consist of one director.

**3.06**

**Chairman**

The chairman of any meeting of the board shall be the director present at the meeting who is the first mentioned of the following officers as have been appointed: chairman of the board, president or a vice-president (in order of seniority). If no such officer is present, the directors present shall choose one of their number to be chairman.

**3.07**

**Action by the Board**

At all meetings of the board every question shall be decided by a majority of the votes cast on the question. In case of an equality of votes the chairman of the meeting shall not be entitled to a second or casting vote. The powers of the board may be exercised by resolution passed at a meeting at which a quorum is present or by resolution in writing signed by all the directors who would be entitled to vote on that resolution at a meeting of the board. Resolutions in writing may be signed in counterparts.

**3.08            Adjourned Meeting**

Any meeting of directors may be adjourned from time to time by the chairman of the meeting, with the consent of the meeting, to a fixed time and place. The adjourned meeting shall be duly constituted if a quorum is present and if it is held in accordance with the terms of the adjournment. If there is no quorum present at the adjourned meeting, the original meeting shall be deemed to have terminated forthwith after its adjournment.

**3.09            Remuneration and Expenses**

The directors shall be paid such remuneration for their services as the board may from time to time determine. The directors shall also be entitled to be reimbursed for reasonable travelling and other expenses properly incurred by them in attending meetings of the board or any committee thereof. Nothing herein contained shall preclude any director from serving the Corporation in any other capacity and receiving remuneration therefor.

**3.10            Officers**

The board from time to time may appoint one or more officers of the Corporation and, without prejudice to rights under any employment contract, may remove any officer of the Corporation. The powers and duties of each officer of the Corporation shall be those determined from time to time by the board and, in the absence of such determination, shall be those usually incidental to the office held.

**3.11            Agents and Attorneys**

The board shall have the power from time to time to appoint agents or attorneys for the Corporation in or outside Canada with such powers of management or otherwise (including the power to sub-delegate) as may be thought fit.

**SECTION FOUR  
COMMITTEES**

**4.01            Transaction of Business**

The powers of any committee of directors may be exercised by a meeting at which a quorum is present or by resolution in writing signed by all the members of such committee who would have been entitled to vote on that resolution at a meeting of the committee. At all meetings of committees every question shall be decided by a majority of the votes cast on the question. In case of an equality of votes the chairman of the meeting shall not be entitled to a second or casting vote. Resolutions in writing may be signed in counterparts.

**4.02            Procedure**

Unless otherwise determined by the board, a quorum for meetings of any committee shall be a majority of its members, each committee shall have the power to appoint its chairman and the rules for calling, holding, conducting and adjourning meetings of the committee shall be the same as those governing the board. Each member of a committee shall serve during the pleasure of the board of directors and, in any event, only so long as he shall be a director. The directors may fill vacancies in a committee by appointment from among their members. Provided that a quorum is maintained, the committee may continue to exercise its powers notwithstanding any vacancy among its members.

## **SECTION FIVE**

### **PROTECTION OF DIRECTORS AND OFFICERS**

#### **5.01            Limitation of Liability**

No director or officer for the time being of the Corporation shall be liable for the acts, receipts, neglects or defaults of any other director or officer or employee, or for joining in any receipt or act for conformity, or for any loss, damage or expense happening to the Corporation through the insufficiency or deficiency of title to any property acquired by the Corporation or for or on behalf of the Corporation or for the insufficiency or deficiency of any security in or upon which any of the moneys of or belonging to the Corporation shall be placed or invested, or for any loss or damage arising from the bankruptcy, insolvency or tortious act of any person, firm or corporation including any person, firm or corporation with whom or with which any moneys, securities or effects shall be lodged or deposited, or for any loss, conversion, misapplication or misappropriation of or any damage resulting from any dealings with any moneys, securities or other assets of or belonging to the Corporation or for any other loss, damage or misfortune whatsoever which may happen in the execution of the duties of his respective office or trust or in relation thereto unless the same shall happen by or through his failure to exercise the powers and to discharge the duties of his office honestly, in good faith and with a view to the best interests of the Corporation and to exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances.

#### **5.02            Indemnity**

The Corporation shall, to the maximum extent permitted under the Act, indemnify a director or officer, a former director or officer, and a person who acts or acted at the Corporation's request as a director or officer of a body corporate of which the Corporation is or was a shareholder or creditor, and his heirs and legal representatives, against all costs, charges and expenses, including any amount paid to settle an action or satisfy a judgment, reasonably incurred by him in respect of any civil, criminal or administrative action or proceeding to which he is made a party by reason of being or having been a director or officer of the Corporation or such body corporate.

## **SECTION SIX**

### **SHARES**

#### **6.01            Non-Recognition of Trusts**

Subject to the provisions of the Act, the Corporation may treat as the absolute owner of any share the person in whose name the share is registered in the securities register as if that person had full legal capacity and authority to exercise all rights of ownership, irrespective of any indication to the contrary through knowledge or notice or description in the Corporation's records or on the share certificate.

#### **6.02            Joint Shareholders**

If two or more persons are registered as joint holders of any share:

- (a) the Corporation shall record only one address on its books for such joint holders; and
- (b) the address of such joint holders for all purposes with respect to the Corporation shall be their recorded address;

any one of such persons may give effectual receipts for the certificate issued in respect thereof or for any dividend, bonus, return of capital or other money payable or warrant issuable in respect of such share.

## **SECTION SEVEN**

### **DIVIDENDS**

#### **7.01            Dividend Cheques**

A dividend payable in cash shall be paid by cheque of the Corporation or of any dividend paying agent appointed by the board, to the order of each registered holder of shares of the class or series in respect of which it has been declared and mailed by prepaid ordinary mail to such registered holder at his recorded address, unless such holder otherwise directs and the Corporation agrees to follow such direction. In the case of joint holders the cheque shall, unless such joint holders otherwise direct and the Corporation agrees to follow such direction, be made payable to the order of all of such joint holders and mailed to them at their recorded address. The mailing of such cheque as aforesaid, unless the same is not paid on due presentation, shall satisfy and discharge the liability for the dividend to the extent of the sum represented thereby plus the amount of any tax which the Corporation is required to and does withhold.

#### **7.02            Non-receipt of Cheques**

In the event of non-receipt of any dividend cheque by the person to whom it is sent as aforesaid, the Corporation shall issue to such person a replacement cheque for a like amount on such terms as to indemnity, reimbursement of expenses and evidence of non-receipt and of title as the board may from time to time prescribe, whether generally or in any particular case.

#### **7.03            Unclaimed Dividends**

Any dividend unclaimed after a period of six years from the date on which the same has been declared to be payable shall be forfeited and shall revert to the Corporation.

## **SECTION EIGHT**

### **MEETINGS OF SHAREHOLDERS**

#### **8.01            Chairman, Secretary and Scrutineers**

The chairman of any meeting of shareholders, who need not be a shareholder of the Corporation, shall be the first mentioned of the following officers as has been appointed and is present at the meeting: chairman of the board, president or a vice-president (in order of seniority). If no such officer is present and willing to act as chairman within fifteen minutes from the time fixed for holding the meeting, the persons present and entitled to vote shall choose one of their number to be chairman. The chairman shall conduct the proceedings at the meeting in all respects and his decision in any matter or thing, including, but without in any way limiting the generality of the foregoing, any question regarding the validity or invalidity of any instruments of proxy and any question as to the admission or rejection of a vote, shall be conclusive and binding upon the shareholders. The secretary of any meeting of shareholders shall be the secretary of the Corporation, provided that, if the Corporation does not have a secretary or if the secretary of the Corporation is absent, the chairman shall appoint some person, who need not be a shareholder, to act as secretary of the meeting. The board may from time to time appoint in advance of any meeting of shareholders one or more persons to act as scrutineers at such meeting and, in the absence of such appointment, the chairman may appoint one or more persons to act as scrutineers at any meeting of shareholders. Scrutineers so appointed may, but need not be, shareholders, directors, officers or employees of the Corporation.

**8.02                    Persons Entitled to be Present**

The only persons entitled to be present at a meeting of shareholders shall be; (a) those entitled to vote at such meeting; (b) the directors and auditors of the Corporation; (c) others who, although not entitled to vote, are entitled or required under any provision of the Act, the articles or the by-laws to be present at the meeting; (d) legal counsel to the Corporation when invited by the Corporation to attend the meeting; and (e) any other person on the invitation of the chairman or with the consent of the meeting.

**8.03                    Quorum**

A quorum for the transaction of business at any meeting of shareholders shall be at least two persons present in person, each being a shareholder entitled to vote thereat or a duly appointed proxy or representative for an absent shareholder so entitled, and representing in the aggregate not less than sixty-six and two thirds percent (66 2/3%) of the outstanding shares of the Corporation carrying voting rights at the meeting, provided that, if there should be only one shareholder of the Corporation entitled to vote at any meeting of shareholders, the quorum for the transaction of business at the meeting of shareholders shall consist of the one shareholder.

**8.04                    Representatives**

The authority of an individual to represent a body corporate or association at a meeting of shareholders of the Corporation shall be established by depositing with the Corporation a certified copy of the resolution of the directors or governing body of the body corporate or association, as the case may be, granting such authority, or in such other manner as may be satisfactory to the chairman of the meeting.

**8.05                    Action by Shareholders**

The shareholders shall act by ordinary resolution unless otherwise required by the Act, articles, by-laws or any unanimous shareholder agreement. In case of an equality of votes either upon a show of hand or upon a poll, the chairman of the meeting shall not be entitled to a second or casting vote.

**8.06                    Show of Hands**

Upon a show of hands every persons who is present and entitled to vote shall have one vote. Whenever a vote by show of hands shall have been taken upon a question, unless a ballot thereon is required or demanded, a declaration by the chairman of the meeting that the vote upon the question has been carried or carried by a particular majority or not carried and an entry to that effect in the minutes of the meeting shall be prima facie evidence of the fact without proof of the number or proportion of the votes recorded in favour of or against any resolution or other proceeding in respect of the said question, and the result of the vote so taken shall be the decision of the shareholders upon the said question.

**8.07                    Ballots**

A ballot required or demanded shall be taken in such manner as the chairman shall direct. A requirement or demand for a ballot may be withdrawn at any time prior to the taking of the ballot. If a ballot is taken each person present shall be entitled, in respect of the shares which he is entitled to vote at the meeting upon the question, to that number of votes provided by the Act or the articles, and the result of the ballot so taken shall be the decision of the shareholders upon the said question.

**8.08                    Meetings by Telephone**

With the consent of the chairman of the meeting or the consent (as evidenced by a resolution) of the persons present and entitled to vote at the meeting, a shareholder or any other person entitled to attend a meeting of share-



holders may participate in the meeting by means of telephone or other communication facilities that permit all persons participating in the meeting to hear each other, and a person participating in such a meeting by those means shall be considered present at the meeting and at the place of the meeting.

## **SECTION NINE**

### **NOTICES**

#### **9.01      Omissions and Errors**

The accidental omission to give any notice to any shareholder, director, officer, auditor or member of a committee of the board or the non-receipt of any notice by any such person or any error in any notice not affecting the substance thereof shall not invalidate any action taken at any meeting held pursuant to such notice or otherwise founded thereon.

#### **9.02      Persons Entitled by Death or Operation of Law**

Every person who, by operation of law, transfer, death of a shareholder or any other means whatsoever shall become entitled to any share, shall be bound by every notice in respect of such share which shall have been duly given to the shareholder from whom he derives his title to such share prior to his name and address being entered on the securities register (whether such notice was given before or after the happening of the event upon which he became so entitled) and prior to his furnishing to the Corporation the proof of authority or evidence of his entitlement prescribed by the Act.

## **SECTION TEN**

### **EFFECTIVE DATE**

#### **10.01    Effective Date**

This by-law shall come into force when made by the board in accordance with the Act.

**MADE** by the board the 31st day of October, 1996.



\_\_\_\_\_  
President

**CONFIRMED** by the Shareholders in accordance with the Act the 31st day of October, 1996.



\_\_\_\_\_  
President

## **BY-LAW NO. 2**

A By-Law relating generally to the transaction of  
the business and affairs of **COMPUTER MODELLING GROUP LTD.**

### **CONTENTS**

<b><u>SECTION</u></b>	<b><u>SUBJECT</u></b>
One	Interpretation
Two	Business of the Corporation
Three	Directors
Four	Committees
Five	Protection of Directors and Officers
Six	Shares
Seven	Dividends
Eight	Meetings of Shareholders
Nine	Notices
Ten	Effective Date

IT IS HEREBY ENACTED as By-law No. 2 of Computer Modelling Group Ltd. (hereinafter called the "Corporation"), such By-law replacing the Amended and Restated By-law No. 1, as follows:

### **SECTION ONE** **INTERPRETATION**

**1.01**

#### **Definitions**

In the by-laws of the Corporation, unless the context otherwise requires:

"Act" means the Business Corporations Act of Alberta, and any statute that may be substituted therefor, as from time to time amended;

"appoint" includes "elect" and vice versa;

"articles" means the articles attached to the Certificate of Incorporation of the Corporation as from time to time amended or restated;

"board" means the board of directors of the Corporation;

"by-laws" means this by-law and all other by-laws of the Corporation from time to time in force and effect;

"meeting of shareholders" means any meeting of shareholders, including any meeting of one or more classes or series of shareholders;

"recorded address" means, in the case of a shareholder, his address as recorded in the securities register; in the case of joint shareholders, the address appearing in the securities register in respect of such joint holding or the first address so appearing if there are more than one; and, in the case of a director, officer, auditor or member of a committee of the board, his latest address as recorded in the records of the Corporation;

"signing officer" means, in relation to any instrument, any person authorized to sign the same on behalf of the Corporation by Section 2.03 or by a resolution passed pursuant thereto.

Save as aforesaid, words and expressions defined in the Act have the same meanings when used herein; and words importing the singular number include the plural and vice versa; words importing gender include the masculine, feminine and neuter genders; and words importing persona include individuals, bodies corporate, partnerships, trusts and unincorporated organizations.

**1.02 Conflict with the Act, the Articles or any Unanimous Shareholder Agreement**

To the extent of any conflict between the provisions of the by-laws and the provisions of the Act, the articles or any unanimous shareholder agreement relating to the Corporation, the provisions of the Act, the articles or the unanimous shareholder agreement shall govern.

**1.03 Headings and Sections**

The headings used throughout the by-laws are inserted for convenience of reference only and are not to be used as an aid in the interpretation of the by-laws. "Section" followed by a number means or refers to the specified section of this by-law.

**1.04 Invalidity of any Provision of By-laws**

The invalidity or unenforceability of any provision of the by-laws shall not affect the validity or enforceability of the remaining provisions of the by-laws.

**SECTION TWO  
BUSINESS OF THE CORPORATION**

**2.01 Corporate Seal**

The corporate seal of the Corporation, if any, shall be in such form as the board may from time to time by resolution approve.

**2.02 Financial Year**

The financial year of the Corporation shall end on such date in each year as the board may from time to time by resolution determine.

**2.03 Execution of Instruments**

Deeds, transfers, assignments, contracts, obligations, certificates and other instruments shall be signed on behalf of the Corporation by any one person who holds the office of chairman of the board, director, president, chief executive officer, vice-president, secretary, treasurer or any other office created by by-law or by resolution of the board; provided that if the Corporation only has one director, that director alone may sign any instruments on behalf of the Corporation. In addition, the board may from time to time direct the manner in which and the person or persons by whom any instrument or instruments may or shall be signed. Any signing officer may affix the corporate seal to any instrument requiring the same.

**2.04 Banking Arrangements**

The banking business of the Corporation including, without limitation, the borrowing of money and the giving of security therefor, shall be transacted with such banks, trust companies or other bodies corporate or organizations as may from time to time be authorized by the board. Such banking business or any part thereof shall be transacted under such agreements, instructions and delegations of powers as the board may from time to time prescribe or authorize.

## **2.05 Voting Rights in Other Bodies Corporate**

The signing officers may execute and deliver proxies and arrange for the issuance of voting certificates or other evidence of the right to exercise the voting rights attaching to any securities held by the Corporation. Such instruments, certificates or other evidence shall be in favour of such person or persons as may be determined by the persons executing such proxies or arranging for the issuance of voting certificates or such other evidence of the right to exercise such voting rights. In addition, the board or, failing the board, the signing officers may from time to time direct the manner in which and the person or persons by whom any particular voting rights or class of voting rights may or shall be exercised.

## **2.06 Insider Trading Reports and Other Filings**

Any one officer or director of the Corporation may execute and file on behalf of the Corporation insider trading reports and other filings of any nature whatsoever required under applicable corporate or securities laws.

## **2.07 Divisions**

The board may from time to time cause the business and operations of the Corporation or any part thereof to be divided into one or more divisions upon such basis, including without limitation, types of business or operations, geographical territories, product lines or goods or services, as the board may consider appropriate in each case. From time to time the board may authorize upon such basis as may be considered appropriate in each case:

- (a) the designation of any such division by, and the carrying on of the business and operations of any such division under, a name other than the name of the Corporation; provided that the Corporation shall set out its name in legible characters in all contracts, invoices, negotiable instruments and orders for goods or services issued or made by or on behalf of the Corporation; and
- (b) the appointment of officers for any such division and the determination of their powers and duties, provided that any such officers shall not, as such, be officers of the Corporation.

# **SECTION THREE** **DIRECTORS**

## **3.01 Number of Directors**

If the articles provide for a minimum number and a maximum number of directors, unless otherwise provided in the articles, the number of directors of the Corporation shall be determined from time to time by resolution of the shareholders.

## **3.02 Calling and Notice of Meetings**

Meetings of the board shall be called and held at such time and at such place as the board, the chairman of the board, the president or any two directors may determine, and the secretary or any other officer shall give notice of meetings when directed or authorized by such persons. Notice of each meeting of the board shall be given in the manner provided in the Act to each director not less than forty-eight hours before the time when the meeting is to be held, provided that, if a quorum of directors is present, the board may without notice hold a meeting immediately following an annual meeting of shareholders. Notice of a meeting of the board may be given verbally, in writing or by telephone, telegraph or any other means of communication. A notice of a meeting of directors need not specify the purpose of or the business to be transacted at the meeting, except where required by the Act. Notwithstanding the foregoing, the board may from time to time fix a day or days in any month or months for regular meetings of the board at a place and hour to be named, in which case, provided that a copy of any such resolution is sent to each director forthwith after being passed and forthwith after each director's appointment, no other notice shall be required for any such regular meeting except where the Act requires specification of the purpose or the business to be transacted thereat.

### 3.03 Place of Meetings

Meetings of the board may be held at any place in or outside Alberta. A director who attends a meeting of directors, in person or by telephone, is deemed to have consented to the location of the meeting except when he attends the meeting for the express purpose of objecting to the transaction of any business on the grounds that the meeting is not lawfully held.

### 3.04 Meetings by Telephone

With the consent of the chairman of the meeting or a majority of the directors present at the meeting, a director may participate in a meeting of the board or of a committee of the board by means of telephone or other communication facilities that permit all persons participating in the meeting to hear each other. A director participating in such a meeting in such manner shall be considered present at the meeting and at the place of the meeting.

### 3.05 Quorum

The quorum for the transaction of business at any meeting of the board shall consist of two directors or such greater or lesser number of directors as the board may from time to time determine, provided that, if the board consists of only one director, the quorum for the transaction of business at any meeting of the board shall consist of one director.

### 3.06 Chairman

The chairman of any meeting of the board shall be the director present at the meeting who is the first mentioned of the following officers as have been appointed: chairman of the board, president or a vice-president (in order of seniority). If no such officer is present, the directors present shall choose one of their number to be chairman.

### 3.07 Action by the Board

At all meetings of the board every question shall be decided by a majority of the votes cast on the question. In case of an equality of votes the chairman of the meeting shall be entitled to a second or casting vote. The powers of the board may be exercised by resolution passed at a meeting at which a quorum is present or by resolution in writing signed by all the directors who would be entitled to vote on that resolution at a meeting of the board. Resolutions in writing may be signed in counterparts.

### 3.08 Adjourned Meeting

Any meeting of directors may be adjourned from time to time by the chairman of the meeting, with the consent of the meeting, to a fixed time and place. The adjourned meeting shall be duly constituted if a quorum is present and if it is held in accordance with the terms of the adjournment. If there is no quorum present at the adjourned meeting, the original meeting shall be deemed to have terminated forthwith after its adjournment.

### 3.09 Remuneration and Expenses

The directors shall be paid such remuneration for their services as the board may from time to time determine. The directors shall also be entitled to be reimbursed for reasonable travelling and other expenses properly incurred by them in attending meetings of the board or any committee thereof. Nothing herein contained shall preclude any director from serving the Corporation in any other capacity and receiving remuneration therefor.

### 3.10 Officers

The board from time to time may appoint one or more officers of the Corporation and, without prejudice to rights under any employment contract, may remove any officer of the Corporation. The powers and duties of each officer of the Corporation shall be those determined from time to time by the board and, in the absence of such determination, shall be those usually incidental to the office held.

### 3.11 Agents and Attorneys

The board shall have the power from time to time to appoint agents or attorneys for the Corporation in or outside Canada with such powers of management or otherwise (including the power to sub-delegate) as may be thought fit.

## **SECTION FOUR COMMITTEES**

### 4.01 Transaction of Business

The powers of any committee of directors may be exercised by a meeting at which a quorum is present or by resolution in writing signed by all the members of such committee who would have been entitled to vote on that resolution at a meeting of the committee. At all meetings of committees every question shall be decided by a majority of the votes cast on the question. In case of an equality of votes the chairman of the meeting shall not be entitled to a second or casting vote. Resolutions in writing may be signed in counterparts.

### 4.02 Procedure

Unless otherwise determined by the board, a quorum for meetings of any committee shall be a majority of its members, each committee shall have the power to appoint its chairman and the rules for calling, holding, conducting and adjourning meetings of the committee shall be the same as those governing the board. Each member of a committee shall serve during the pleasure of the board of directors and, in any event, only so long as he shall be a director. The directors may fill vacancies in a committee by appointment from among their members. Provided that a quorum is maintained, the committee may continue to exercise its powers notwithstanding any vacancy among its members.

## **SECTION FIVE PROTECTION OF DIRECTORS AND OFFICERS**

### 5.01 Limitation of Liability

No director or officer for the time being of the Corporation shall be liable for the acts, receipts, neglects or defaults of any other director or officer or employee, or for joining in any receipt or act for conformity, or for any loss, damage or expense happening to the Corporation through the insufficiency or deficiency of title to any property acquired by the Corporation or for or on behalf of the Corporation or for the insufficiency or deficiency of any security in or upon which any of the moneys of or belonging to the Corporation shall be placed or invested, or for any loss or damage arising from the bankruptcy, insolvency or tortious act of any person, firm or corporation including any person, firm or corporation with whom or with which any moneys, securities or effects shall be lodged or deposited, or for any loss, conversion, misapplication or misappropriation of or any damage resulting from any dealings with any moneys, securities or other assets of or belonging to the Corporation or for any other loss, damage or misfortune whatsoever which may happen in the execution of the duties of his respective office or trust or in relation thereto unless the same shall happen by or through his failure to exercise the powers and to discharge the duties of his office honestly, in good faith and with a view to the best interests of the Corporation and to exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances.

### 5.02 Indemnity

The Corporation shall, to the maximum extent permitted under the Act, indemnify a director or officer, a former director or officer, and a person who acts or acted at the Corporation's request as a director or officer of a body corporate of which the Corporation is or was a shareholder or creditor, and his heirs and legal representatives, against all costs, charges and expenses, including any amount paid to settle an action or satisfy a judgment, reasonably incurred by him in respect of any civil, criminal or administrative action or proceeding to which he is made a party by reason of being or having been a director or officer of the Corporation or such body corporate.

## SECTION SIX SHARES

### 6.01 Non-Recognition of Trusts

Subject to the provisions of the Act, the Corporation may treat as the absolute owner of any share the person in whose name the share is registered in the securities register as if that person had full legal capacity and authority to exercise all rights of ownership, irrespective of any indication to the contrary through knowledge or notice or description in the Corporation's records or on the share certificate.

### 6.02 Joint Shareholders

If two or more persons are registered as joint holders of any share:

- (a) the Corporation shall record only one address on its books for such joint holders; and
- (b) the address of such joint holders for all purposes with respect to the Corporation shall be their recorded address;

any one of such persons may give effectual receipts for the certificate issued in respect thereof or for any dividend, bonus, return of capital or other money payable or warrant issuable in respect of such share.

## SECTION SEVEN DIVIDENDS

### 7.01 Dividend Cheques

A dividend payable in cash shall be paid by cheque of the Corporation or of any dividend paying agent appointed by the board, to the order of each registered holder of shares of the class or series in respect of which it has been declared and mailed by prepaid ordinary mail to such registered holder at his recorded address, unless such holder otherwise directs and the Corporation agrees to follow such direction. In the case of joint holders the cheque shall, unless such joint holders otherwise direct and the Corporation agrees to follow such direction, be made payable to the order of all of such joint holders and mailed to them at their recorded address. The mailing of such cheque as aforesaid, unless the same is not paid on due presentation, shall satisfy and discharge the liability for the dividend to the extent of the sum represented thereby plus the amount of any tax which the Corporation is required to and does withhold.

### 7.02 Non-receipt of Cheques

In the event of non-receipt of any dividend cheque by the person to whom it is sent as aforesaid, the Corporation shall issue to such person a replacement cheque for a like amount on such terms as to indemnity, reimbursement of expenses and evidence of non-receipt and of title as the board may from time to time prescribe, whether generally or in any particular case.

### 7.03 Unclaimed Dividends

Any dividend unclaimed after a period of six years from the date on which the same has been declared to be payable shall be forfeited and shall revert to the Corporation.

## SECTION EIGHT MEETINGS OF SHAREHOLDERS

### 8.01 Chairman, Secretary and Scrutineers

The chairman of any meeting of shareholders, who need not be a shareholder of the Corporation, shall be the first mentioned of the following officers as has been appointed and is present at the meeting: chairman of the board, president or a vice-president (in order of seniority). If no such officer is present and willing to act as chairman within fifteen minutes from the time fixed for holding the meeting, the persons present and entitled to vote shall choose one of their number to be chairman. The chairman shall conduct the proceedings at the meeting in all

respects and his decision in any matter or thing, including, but without in any way limiting the generality of the foregoing, any question regarding the validity or invalidity of any instruments of proxy and any question as to the admission or rejection of a vote, shall be conclusive and binding upon the shareholders. The secretary of any meeting of shareholders shall be the secretary of the Corporation, provided that, if the Corporation does not have a secretary or if the secretary of the Corporation is absent, the chairman shall appoint some person, who need not be a shareholder, to act as secretary of the meeting. The board may from time to time appoint in advance of any meeting of shareholders one or more persons to act as scrutineers at such meeting and, in the absence of such appointment, the chairman may appoint one or more persons to act as scrutineers at any meeting of shareholders. Scrutineers so appointed may, but need not be, shareholders, directors, officers or employees of the Corporation.

#### **8.02 Persons Entitled to be Present**

The only persons entitled to be present at a meeting of shareholders shall be; (a) those entitled to vote at such meeting; (b) the directors and auditors of the Corporation; (c) others who, although not entitled to vote, are entitled or required under any provision of the Act, the articles or the by-laws to be present at the meeting; (d) legal counsel to the Corporation when invited by the Corporation to attend the meeting; and (e) any other person on the invitation of the chairman or with the consent of the meeting.

#### **8.03 Quorum**

A quorum for the transaction of business at any meeting of shareholders shall be at least two persons present in person, each being a shareholder entitled to vote thereat or a duly appointed proxy or representative for an absent shareholder so entitled, and representing in the aggregate not less than five percent (5%) of the outstanding shares of the Corporation carrying voting rights at the meeting, provided that, if there should be only one shareholder of the Corporation entitled to vote at any meeting of shareholders, the quorum for the transaction of business at the meeting of shareholders shall consist of the one shareholder.

#### **8.04 Representatives**

The authority of an individual to represent a body corporate or association at a meeting of shareholders of the Corporation shall be established by depositing with the Corporation a certified copy of the resolution of the directors or governing body of the body corporate or association, as the case may be, granting such authority, or in such other manner as may be satisfactory to the chairman of the meeting.

#### **8.05 Action by Shareholders**

The shareholders shall act by ordinary resolution unless otherwise required by the Act, articles, by-laws or any unanimous shareholder agreement. In case of an equality of votes either upon a show of hand or upon a poll, the chairman of the meeting shall not be entitled to a second or casting vote.

#### **8.06 Show of Hands**

Upon a show of hands every persons who is present and entitled to vote shall have one vote. Whenever a vote by show of hands shall have been taken upon a question, unless a ballot thereon is required or demanded, a declaration by the chairman of the meeting that the vote upon the question has been carried or carried by a particular majority or not carried and an entry to that effect in the minutes of the meeting shall be prima facie evidence of the fact without proof of the number or proportion of the votes recorded in favour of or against any resolution or other proceeding in respect of the said question, and the result of the vote so taken shall be the decision of the shareholders upon the said question.

#### **8.07 Ballots**

A ballot required or demanded shall be taken in such manner as the chairman shall direct. A requirement or demand for a ballot may be withdrawn at any time prior to the taking of the ballot. If a ballot is taken each person present shall be entitled, in respect of the shares which he is entitled to vote at the meeting upon the question, to that number of votes provided by the Act or the articles, and the result of the ballot so taken shall be the decision of the shareholders upon the said question.



**8.08 Meetings by Telephone**

With the consent of the chairman of the meeting or the consent (as evidenced by a resolution) of the persons present and entitled to vote at the meeting, a shareholder or any other person entitled to attend a meeting of share-holders may participate in the meeting by means of telephone or other communication facilities that permit all persons participating in the meeting to hear each other, and a person participating in such a meeting by those means shall be considered present at the meeting and at the place of the meeting.

**SECTION NINE  
NOTICES****9.01 Omissions and Errors**

The accidental omission to give any notice to any shareholder, director, officer, auditor or member of a committee of the board or the non-receipt of any notice by any such person or any error in any notice not affecting the substance thereof shall not invalidate any action taken at any meeting held pursuant to such notice or otherwise founded thereon.

**9.02 Persons Entitled by Death or Operation of Law**

Every person who, by operation of law, transfer, death of a shareholder or any other means whatsoever shall become entitled to any share, shall be bound by every notice in respect of such share which shall have been duly given to the shareholder from whom he derives his title to such share prior to his name and address being entered on the securities register (whether such notice was given before or after the happening of the event upon which he became so entitled) and prior to his furnishing to the Corporation the proof of authority or evidence of his entitlement prescribed by the Act.

**SECTION TEN  
EFFECTIVE DATE****10.01 Effective Date**

This amended and restated by-law shall come into force when made by the board in accordance with the Act.

**MADE** by the board the 31st day of October, 2000.

\_\_\_\_\_  
Chairman of the Board

**CONFIRMED** by the Shareholders in accordance with the Act the 25th day of May, 2001.

\_\_\_\_\_  
Chairman of the Board

**COMPUTER MODELLING GROUP LTD.  
BY-LAW NO. 3**

A by-law relating to certain procedural requirements for  
the election of directors of COMPUTER MODELLING GROUP LTD.  
(as amended and restated May 20, 2015)

**1.01      Definitions**

In this By-law No. 3, unless the context otherwise requires:

**"Act"** means the *Business Corporations Act* (Alberta), and any statute that may be substituted therefor, as from time to time amended;

**"Applicable Securities Laws"** means the applicable securities legislation of each relevant province and territory of Canada, as amended from time to time, the rules, regulations and forms made or promulgated under any such statute and the published national instruments, multilateral instruments, policies, bulletins and notices of the securities commission and similar regulatory authority of each province and territory of Canada;

**"Articles"** means the articles of Corporation as defined in the Act;

**"Board"** means the Board of Directors of the Corporation;

**"Corporation"** means Computer Modelling Group Ltd.; and

**"public announcement"** means disclosure in a press release reported by a national news service in Canada, or in a document publicly filed by the Corporation under its profile on the System of Electronic Document Analysis and Retrieval at [www.sedar.com](http://www.sedar.com).

**2.01      Nomination Procedures**

Subject only to the Act and the Articles of the Corporation, only persons who are nominated in accordance with the following procedures shall be eligible for election as directors of the Corporation. Nominations of persons for election to the Board may be made at any annual meeting of shareholders, or at any special meeting of shareholders if one of the purposes for which the special meeting was called is the election of directors:

- (a) by or at the direction of the Board, including pursuant to a notice of meeting;
- (b) by or at the direction or request of one or more shareholders pursuant to a proposal made in accordance with the provisions of the Act, or a requisition of the shareholders made in accordance with the provisions of the Act; or
- (c) by any person (a **"Nominating Shareholder"**): (A) who, at the close of business on the date of the giving of the notice provided for below in this By-law and on the record date for notice of such meeting of shareholders, is entered in the securities register as a holder of one or more shares carrying the right to vote at such meeting or who beneficially owns shares that are entitled to be voted at such meeting; and (B) who complies with the notice procedures set forth below in this By-law.

### **3.01**            **Timely Notice**

In addition to any other applicable requirements, for a nomination to be made by a Nominating Shareholder, the Nominating Shareholder must have given timely notice thereof in proper written form to the Secretary of the Corporation at the principal executive offices of the Corporation in accordance with section 5.01 below.

### **4.01**            **Manner of Timely Notice**

To be timely, a Nominating Shareholder's notice to the Secretary of the Corporation must be made:

- (a) in the case of an annual meeting of shareholders, not less than 30 days prior to the date of the annual meeting of shareholders; provided, however, that in the event that the annual meeting of shareholders is to be held on a date that is less than 50 days after the date on which the first public announcement (the "**Notice Date**") of the date of the annual meeting was made, notice by the Nominating Shareholder may be made not later than the close of business on the tenth (10th) day following the Notice Date; and
- (b) in the case of a special meeting (which is not also an annual meeting) of shareholders called for the purpose of electing directors (whether or not called for other purposes as well), not later than the close of business on the fifteenth (15th) day following the day on which the first public announcement of the date of the special meeting of shareholders was made.

### **5.01**            **Proper Form of Timely Notice**

To be in proper written form, a Nominating Shareholder's notice to the Secretary of the Corporation must set forth:

- (a) as to each person whom the Nominating Shareholder proposes to nominate for election as a director: (A) the name, age, business address and residential address of the person; (B) the principal occupation or employment of the person for the last five years; (C) the status of such person as a "resident Canadian" as defined in the Act; (D) the class or series and number of shares in the capital of the Corporation which are controlled or which are owned beneficially or of record by the person as of the record date for the meeting of shareholders (if such date shall then have been made publicly available and shall have occurred) and as of the date of such notice; and (E) any other information relating to the person that would be required to be disclosed in a dissident's proxy circular in connection with solicitations of proxies for election of directors pursuant to the Act and Applicable Securities Laws; and
- (b) as to the Nominating Shareholder giving the notice: (A) the name, age, business and residential address of such Nominating Shareholder; (B) the class or series and number of shares in the capital of the Corporation which are controlled or which are owned beneficially or of record by the person as of the record date for the meeting of shareholders (if such date shall then have been made publicly available and shall have occurred) and as of the date of such notice; and (C) any information relating to such Nominating Shareholder that would be required to be made in a dissident's proxy circular in connection with solicitations of proxies for election of directors pursuant to the Act and Applicable Securities Laws.

### **6.01**            **Notice to be Updated**

All information to be provided in a timely notice pursuant to section 5.01 above shall be provided as of the date of such notice. If requested by the Corporation, the Nominating Shareholder shall update such information forthwith so that it is true and correct in all material respects as of the date that is 10 business days prior to the date of the meeting, or any adjournment or postponement thereof.

**7.01                    Eligibility for Nomination as a Director**

No person shall be eligible for election as a director of the Corporation unless nominated in accordance with the provisions of this By-law; provided, however, that nothing in this By-law shall be deemed to preclude discussion by a shareholder (as distinct from the nomination of directors) at a meeting of shareholders of any matter in respect of which it would have been entitled to submit a proposal pursuant to the provisions of the Act. The Chairman of the meeting shall have the power and duty to determine whether a nomination was made in accordance with the procedures set forth in the foregoing provisions and, if any proposed nomination is not in compliance with such foregoing provisions, to declare that such defective nomination shall be disregarded.

**8.01                    Delivery of Notice**

Notwithstanding any other provision of this By-law, notice given to the Secretary of the Corporation pursuant to this By-law may only be given by personal delivery, facsimile transmission or by email (to the Secretary of the Corporation), and shall be deemed to have been given and made only at the time it is served by personal delivery, email or sent by facsimile transmission (provided that receipt of confirmation of such transmission has been received) to the Secretary at the address of the principal executive offices of the Corporation; provided that if such delivery or electronic communication is made on a day which is a not a business day or later than 5:00 p.m. (Calgary time) on a day which is a business day, then such delivery or electronic communication shall be deemed to have been made on the subsequent day that is a business day.

**9.01                    Board Discretion**

Notwithstanding the foregoing, the Board may, in its sole discretion, waive any requirement in this By-law.

**10.01                  Effective Date**

Subject to its confirmation by the shareholders in accordance with the Act, this By-law will come into force on the date approved by the Board.

**MADE** by the Board of Directors the 20th day of May, 2015.