Request for Information (RFI)

A Modgen Replacement Software Solution to support the construction of microsimulation models

This is not a bid solicitation

A.1 Background and Purpose of this Request for Information (RFI)

Statistics Canada (StatCan) seeks to understand the level of capability and interest in the industry in providing commercial off-the-shelf software (COTS) Software Solution to replace its current microsimulation software Modgen to support the construction of microsimulation models.

Modgen (Model generator) is a generic microsimulation programming framework supporting the creation, maintenance and documentation of dynamic microsimulation models. Modgen microsimulation development framework was created and maintained at Statistics Canada. This framework is complex and includes a microsimulation programming language, a compiler and a library; these contain all the "software" parts of microsimulation models for example graphical interfaces, event queuing, tabulation and syntax.

Statistics Canada is considering options for the replacement of this legacy system.

A.2 Objective of the RFI

The purpose of this RFI is to provide clear communication of the current service delivery model including the business and technical environment in which microsimulations are produced. This document will provide an overview of the present and future StatCan microsimulation process requirements and links to more detailed information. This Request for Information is not a solicitation and there are no commitments with respect to future purchases or contracts. The feedback and information received will be reviewed as part of the process of considering a Request for Proposal (RFP).

A.3 Scope of the Requirement

Alternative commercial off-the-shelf software (COTS) would need to be able to support or improve upon this subject matter driven microsimulation success. Modgen was created for efficiency reasons: to be a common standardized tool, avoid rework and reduce dependency on programming resources. Furthermore, with the present framework, a model developer does not need to have advanced programming skills as a prerequisite to use Modgen. This is possible because Modgen has a simple syntax, hides underlying mechanisms like event queueing, and creates a stand-alone standardized model executable program with a complete visual interface and detailed model documentation automatically. Model developers do not need to be computer programmers and they can therefore concentrate on model specific code: the declaration of parameters, simulated actors, and events. This framework allows subject matter experts to create complex microsimulation tools in their field of expertise.

Modgen is a publically available proprietary product of Statistics Canada. It is a 32-bit application which runs on Microsoft Windows. Its replacement needs to be able to produce a microsimulation that is a continuous time competing risk model with a dynamic coupled queue structure with the potential for an interacting population with a dynamically updateable network. Additionally, the solution needs to meet the high level requirements found in Appendix A.

More information on Modgen, including a link to a download page, can be found on the Statistics Canada web site at: http://www.statcan.gc.ca/MICROSIMULATION/modgen/modgen-eng.htm.

Samples of simulation models written in ModGen can be downloaded from http://www.statcan.gc.ca/MICROSIMULATION/modgen/download-telecharger-eng.htm.

Information on the Standard on Web Accessibility can be found at:
http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=23601

Information on the Treasury Board information or technology standard (TBITS) can be found at:
http://www.tbs-sct.gc.ca/it-ti/itp-pti/its-nit-eng.asp

Information of the Operational Security Standard: Management of Information Technology Security (MITS) can be found at:
http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12328&section=text

A.4 Contents of this RFI

i) Appendix A of this RFI contains the high-level requirements for the Software Solution. This document remains a work in progress and respondents should not assume that new clauses or requirements will not be added to any bid solicitation that is ultimately published by Canada. Nor should respondents assume that none of the clauses or requirements will be deleted or revised. Comments regarding any aspect of the draft document are welcome.

ii) This RFI also contains specific questions addressed to the industry

Questions to Industry

This section solicits specific feedback and comments on the Software Solution to support the creation of microsimulation models. Comments and responses are requested to satisfy the minimum criteria to be reviewed:

Question 1:
Is your Software Solution capable of tracking individual cases automatically and outputting these cases at every step of the simulation process?

Question 2:
Is your Software Solution capable of cloning actors inside the simulation?

Question 3:
Is your Software Solution capable of handling various simulation types such as case-based (open) and time based (closed) models?

Question 4:
Is your Software Solution able to handle complex non-standard queues? Describe how the event queue is updated when a new competing event is added to a model.

Question 5:
Is your Software Solution capable of modeling 50 million actors in a model with dozens of competing events?

Question 6:

What is your business model for providing the maintenance and support of the Software Solution?

Question 7:

Is your Software Solution easily configurable, e.g., can the client introduce process changes to the system with limited or no impact when installing product upgrades and patches?

Question 8:

Describe similar instances where your product was or will be implemented to support microsimulation creation.

Question 9:

What technical challenges do you foresee with adapting your product to our environment and business rules?

Question 10:

How do you price the implementation of a Software Solution, including licences and configuration support fees, if possible?

Question 11:

Is your Software Solution easily used by non-programmers? If not, what level of technical skill does your Software Solution require?

Question 12:

Does your Software Solution comply with Government of Canada accessibility standards?

Question 13:

Does your Software Solution comply with Government of Canada security requirements?

Question 14:

What languages do your Software Solution and its interfaces support? Is your Software Solution adaptable to other languages?

Question 15:

What would be a potential timeline for implementing the Software Solution?

Question 16:

How scalable is this Software Solution? Can it be run in a cluster, or unattended?

Question 17:

How portable is this Software Solution? Does it run on Linux? Does it have issues with 64-bit systems? Can it run on low power ARM chips such as used in iOS and Android devices?

Question 18:

How will bugs be reported, tracked, tested and fixed?

Question 19:

What proprietary technology is used in your software?

Question 20:

What benefit does your Software Solution provide over other possible solutions that you are aware of?

A.5 Format of Responses

(a) **Cover Page**: If the response includes multiple volumes, respondents are requested to indicate on the front cover page of each volume the title of the response, the solicitation number, the volume number and the full legal name of the respondent.

(b) **Title Page**: The first page of each volume of the response, after the cover page, should be the title page, which should contain:

(i) the title of the respondent's response and the volume number;
(ii) the name and address of the respondent;
(iii) the name, address and telephone number of the respondent's contact;
(iv) the date; and
(v) the RFI number.

(c) **Numbering System**: Respondents are requested to prepare their response using a numbering system corresponding to the one in this RFI. All references to descriptive material, technical manuals and brochures included as part of the response should be referenced accordingly.

A.6 Enquiries and Submission of Responses

Because this is not a bid solicitation, Canada will not necessarily respond to enquiries in writing or by circulating answers to all potential suppliers. However, respondents with questions regarding this RFI may direct their enquiries to:

Contracting Authority:	Nausheena Wright
E-mail Address:	macs-bids@statcan.gc.ca
Telephone:	613-951-2749

Respondents can submit their responses by email or regular mail to:

Email:	macs-bids@statcan.gc.ca
Address:	Attn: Nausheena Wright 150 Tunney's Pasture Driveway, Main Building, Room 1405 I Ottawa, Ontario K1A 0T6

Responses are requested by November 14, 2014. Preferred method of receipt is email.

Appendix A

Allows subject matter experts to create complex microsimulation tools in their field of expertise without needing advanced programming skills.
Supports continuous-time microsimulation models.
Allows time-based and case-based microsimulation models
Does not require rebuilding of functioning microsimulation models
Affordability
Automatically generates documentation
Allows for distributed execution
Bilingual interface
Compatible with Modgen Web
Optimizes Model run time
Model executable can be shared with external clients