Executive Summary

This technical report provides the results of the Commercial Vehicle Operations (CVO) Feasibility Study undertaken by SAIC Canada for Transport Canada. SAIC Canada expresses its appreciation at the opportunity to work on such an important project for the future of ITS in Canada.

The purpose of the study was to:

1. Determine the technical feasibility of implementing a commercial vehicle network for Canada.

2. Explore the applicability of the United States Commercial Vehicle Information Systems and Networks (CVISN) Level I CVO requirements to the Canadian environment.

3. Assess current readiness of provincial/territorial commercial vehicle safety systems to share safety related information amongst Canadian jurisdictions and with the United States.

4. Specify the requirements to enable information to be exchanged in near real-time through the use of carrier snapshots and make such information available at the roadside.

5. Evaluate the options and costs for developing a Canadian commercial vehicle operation network and propose a road map for its implementation across Canada.

The results of the study, relative to the above scope, are as follows:

1. A CVO network is feasible for Canada. SAIC Canada reached this conclusion after an extensive literature review, interviews with staff in many Canadian jurisdictions, interviews with US ITS experts and administrators involved with CVISN and with the CCMTA secretariat.

2. While there are many lessons to be learnt from the US CVISN system, CVISN itself has limited applicability to Canada due to the different regulatory framework, the volume of traffic and the geography. One important consideration that SAIC Canada took into account was the recommendation from several sources that Canada adopt a centralised system. However not all lessons were technical. SAIC Canada found that institutional issues often create major barriers and hurdles to successful deployment and that Canada may wish to consider establishing a program similar to the US Mainstreaming Program as a means to facilitate the jurisdictions into a common forum.

3. There is a broad range of readiness across Canada for a data-sharing network. Many jurisdictions are highly automated, while others still use many manual processes. A network can be implemented, but will not be fully effective until all jurisdictions reach the same level of automation. Specifically until inspections are entered directly into a jurisdiction's databases and inspection data is available in near–real time, the system will only be able to provide good information for vehicles from certain jurisdictions.

4. The technical requirements for sharing snapshots are relatively few, but do include many security requirements both to ensure the integrity of the data and functionally dealing with the security regime at border crossings. However there are several non-technical requirements that need to be addressed. These include standardising the safety rating and developing a common identifier for carriers. In addition the question of "ownership" of the network needs to be resolved. SAIC Canada recommends the CCMTA take ownership of the network and associated systems as they have all the necessary mechanisms already in place.

5. There are many options for the sharing of CVO data and for the network to support it. SAIC Canada recommends a centralised system initially using the existing IRE network. This option has the advantage of being the cheapest, while building upon the current IRE network's capability and the knowledge base in the jurisdictions. This should result in the quickest implementation for the initial sharing of snapshot data. The cost to develop this system is approximately $1.8M, including costs for jurisdictions to update their legacy system appropriately. This does not include any outreach costs by Transport Canada, nor any costs for jurisdictions to further automate their existing systems e.g. to automate the collection of inspection data at the roadside. Total costs over a five-year period, including support, would be approximately $4.6M. The initial implementation would only allow for the sharing of carrier snapshots and transponder information, and the generation of alarms based on Current Trip Information. This supports the initial implementation of the ECRI system being proposed by Tri-Global Solutions in a parallel project. Once the initial system is operational it can be expanded to include the sharing of additional information, such as credentialing and can be moved to a Virtual Private Network (VPN) to allow for a broader range of web-based features. A VPN can be installed for approximately $500k, with some potential savings if the IRE network is also converted.

In addition SAIC Canada was required to look at various aspects of the security regime at the Canada-US border, including harmonisation with the US CVISN system, interfacing with the ITDS, Canada customs and Canada/ US immigration. As part of this work, a review was performed of the various organisations that compile and/or require information related to the transportation of dangerous goods or hazardous materials across provincial and international boundaries. With each organisation, possible methods of integrating their information sources within an ITS were discussed, as well as the types of information they would find useful to acquire from an ITS.

SAIC Canada also reviewed the present border regime and reviewed several border crossing initiatives aimed at improving border security while speeding up crossing time. However SAIC feels that, given the present pace of border crossing initiatives, it would be premature to suggest anything specific that a CVO network should contribute.

SAIC Canada has concluded that a system/network as recommended should be relatively easy to harmonise with the US CVISN. The basis of the system is presently the snapshot and the snapshot suggested is based on the snapshot currently being used in the US. Additionally, the network can be used to access information regarding driver and vehicle and ultimately inspection data for US vehicles. As part of the ongoing IRE initiative, CCMTA are working with their US counterparts to make US driver and vehicle information available in Canada and vice versa.

SAIC Canada would like to thank Transport Canada for their support, CCMTA secretariat for their assistance and access to information regarding IRE and CDE and to all the provincial members of the Steering Committee for their support and their co-operation in establishing interviews with staff in their Provinces. The work undertaken in this study established a viable process for the development of a Canada wide CVO network that can support the sharing of data and build upon initiatives undertaken over many years by the CCMTA.