Guide for Review of the Draft Architecture
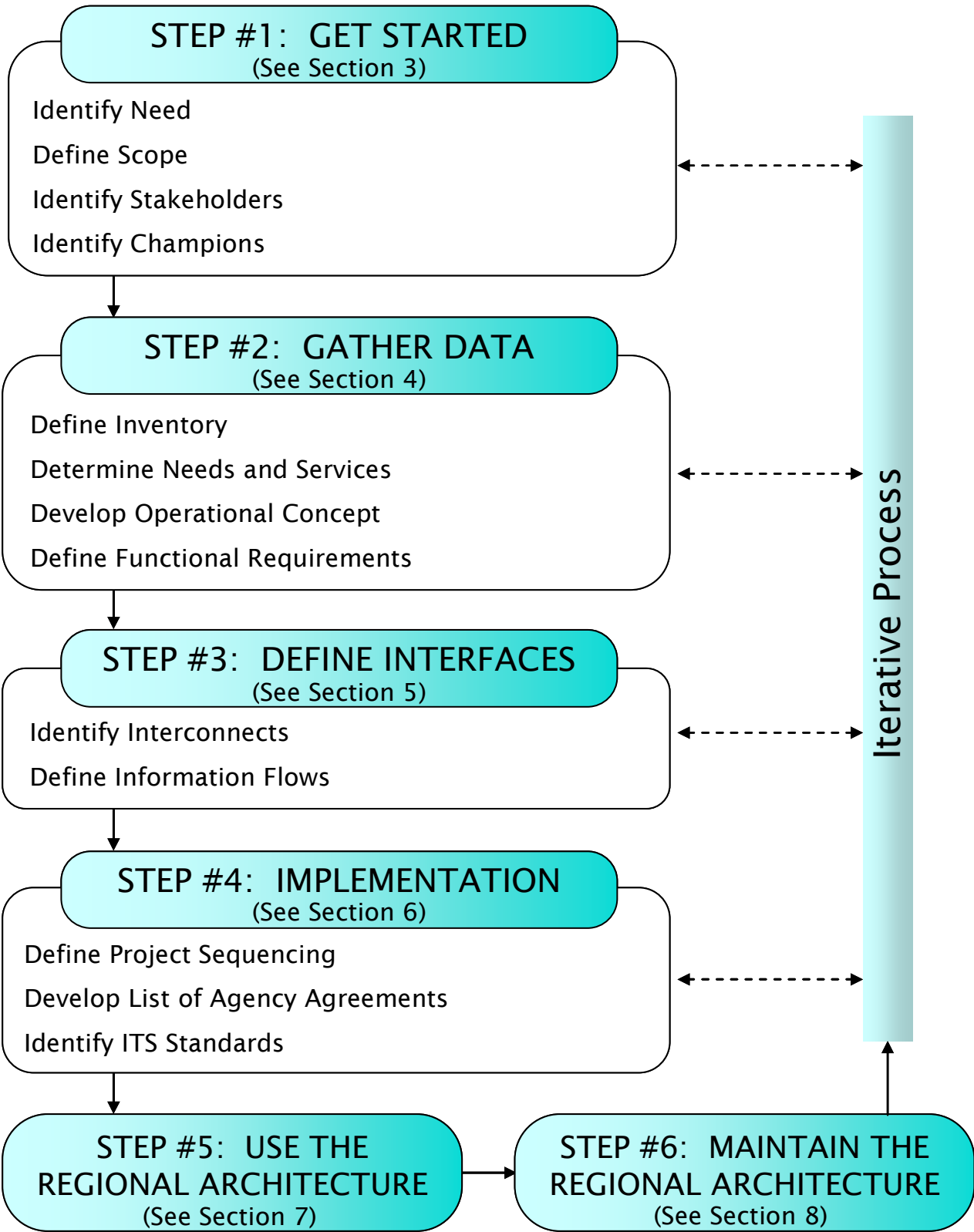
Regional ITS Architecture Guidance

The Regional ITS Architecture Guidance for Canada: Developing, Using and Maintaining an ITS Architecture For Your Region (Version 1.0) was developed by Transport Canada and is a guide for transportation professionals who are involved in the development, use, or maintenance of regional ITS architectures. The document describes a process for creating a regional ITS architecture with supporting examples of each architecture product. It describes a process for creating a regional ITS architecture with supporting examples of each product and discusses mainstreaming ITS into the planning and project development processes. The complete guide can be downloaded at the following link on the Transport Canada website:

http://wwwapps.tc.gc.ca/innovation/its/eng/architecture/documents/regional_its_architecture_guidance/menu.htm

Exhibit 1 shows six general steps in the "lifecycle" of a regional ITS architecture. In the first four steps, the regional ITS architecture products are developed and then these products are used and maintained in Steps 5 and 6. The development process begins with basic scope definition and team building and moves through increasingly detailed steps, culminating in specific products that will guide the "implementation" of the regional ITS architecture. Step 1 and most of Step 2 were accomplished through workshops with the Smart Corridor stakeholders, while Steps 3 and 4 are currently being completed based on the results of the workshops and reviewed offline via the planned webinars and draft architecture website.

Based on the organization of the side menu for the draft architecture website, the following provides a recommended process for Stakeholder review of the draft material. To provide comment, an email link may be found at the bottom of each web page.

Exhibit 1: Regional Architecture Development Process

STEP #1: GET STARTED
(See Section 3)

Identify Need

Define Scope

Identify Stakeholders

Identify Champions

STEP #2: GATHER DATA
(See Section 4)

Define Inventory

Determine Needs and Services

Develop Operational Concept

Define Functional Requirements

STEP #3: DEFINE INTERFACES
(See Section 5)

Identify Interconnects

Define Information Flows

STEP #4: IMPLEMENTATION
(See Section 6)

Define Project Sequencing

Develop List of Agency Agreements

Identify ITS Standards

STEP #5: USE THE REGIONAL ARCHITECTURE
(See Section 7)

STEP #6: MAINTAIN THE REGIONAL ARCHITECTURE
(See Section 8)

Iterative Process

Review Process

Step 1 – Understand Scope

Click on 'Home' in the left Menu to understand the scope of the Smart Corridor Concept of Operations and supporting ITS Architecture.

Step 2 – Background Information

Click on 'Downloads' in the left Menu to access previous project material, including Background Documentation and material from the two project workshops.

Step 3 – Concept of Operations

Click on 'Concept of Operations' in the left Menu to understand how the Concept of Operations for the Smart Corridor is being documented. The page includes the high-level Needs identified for the corridor as part of the first project workshop.

User Views are used to illustrate the Concept of Operations from the perspective of key corridor stakeholders in terms of the current operating environment, the relevant needs, the future operating environment, and the associated relevant systems applications and institutional considerations implicated in realizing the future vision.

Click on the link for each stakeholder perspective to review the Current and Smart Corridor (Future) User View.

- **Commercial Vehicle Operations** - reflecting the drivers and dispatchers for carriers operating within the corridor and beyond, and the perspective of transportation authorities operating road networks;

- **Provincial Commercial Vehicle Enforcement** – reflecting the carrier safety enforcement responsibilities of MTO and SAAQ;

- **Shipper** - reflecting the end-to-end supply chain management process for shipments through the corridor, conceivably with origins or destinations beyond the corridor; and

- **Border and Port of Entry Transit of In-Bond Container** - reflecting the perspective of border authorities in processing international shipments;

Step 4 – ITS Architecture

Click on 'ITS Architecture' in the left Menu for a quick summary of the ITS Architecture documentation (more detailed information can be found in the Background Documentation – see Step 2).

Step 5 – Stakeholders

Click on 'Stakeholders' in the left Menu to view an alphabetical list of the Stakeholders referenced in the architecture. Stakeholder here represent the owners, operators and maintainers of ITS within the Corridor and/or bordering the Corridor, as well as agencies that influence relevant policy.

Start by finding yourself in the list and reviewing Stakeholder Name and Description.

It should be noted that Stakeholders may be aggregated at different levels, for example:

- Goods Movement Related

  - by function (e.g. shipper, carrier, broker)
  - one organization may be responsible for multiple functions (e.g. Walmart)

- Provincial Ministries of Transportation

  - key departments/offices that relate directly to ITS

- Common Stakeholders

  - e.g. Municipal Transportation Agencies
  - represent common agencies with similar elements and responsibilities
  - minimizes duplication simplifies framework diagrams

Step 6 – Roles and Responsibilities

From the Stakeholder List (see Step 5), click on the name of the Stakeholder that you represent. For some stakeholders there will be relevant Roles and Responsibilities listed at the bottom related to:

- Archived Data Systems
- Commercial Vehicle Operations
- Electronic Payment
- Emergency Management
- Incident Management
- International Border Crossings
- Policy and Guidance
- Traffic Management
- Traveller Information
- Weather Data Collection and Processing

If applicable, review the relevant Roles and Responsibilities.
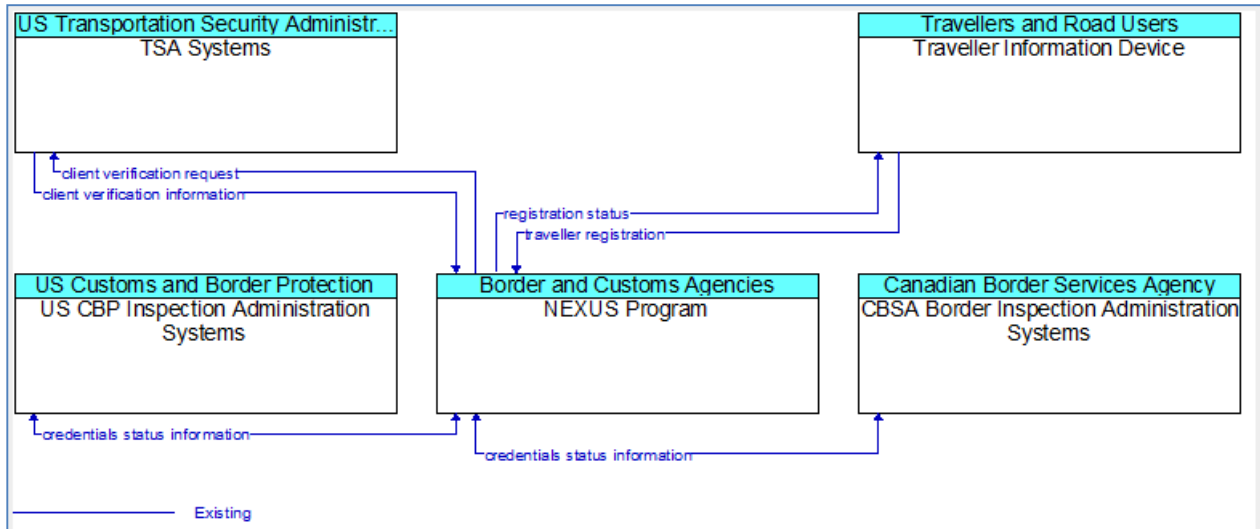

Step 7 – Inventory

Click on 'Inventory' in the left Menu to view a list of ITS elements organized by Stakeholders (see Step 5). The Inventory elements represent the existing and planned ITS systems in a region as well as non-ITS systems that provide information to or get information from the ITS systems.

Inventory by Stakeholder (Draft)

Each stakeholder is associated with one or more systems or "elements" that make up the regional transportation system. This table sorts the inventory by stakeholder, so each stakeholder can easily identify and review the information for all elements that they own and operate.

Stakeholder	Element
Air Cargo Operators	Air Fleet and Freight Management Systems
Airport Authorities and Operators	Airport Traveller Information Services
Border and Customs Agencies	Free and Secure Trade (FAST) Program
	NEXUS Program

Start by finding yourself in the Stakeholder column and click on the associated inventory items to review their names, descriptions and status. *Alternatively, you may click on your stakeholder name from the Stakeholder page (see Step 5) to find a focused list of your associated inventory elements.*

NEXUS Program

Status   Existing

Descripton

NEXUS is a joint initiative between the Canada Border Services Agency (CBSA) and U.S. Customs and Border Protection (CBP) that enhances border clearance process, while enhancing security, for low-risk, pre-approved travellers into Canada and the United States.

Stakeholder

Border and Customs Agencies

Functionality

Border Inspection Administration
Other Border Inspection Administration

Interfaces To   (View Context Diagram)

CBSA Border Inspection Administration Systems
Traveller Information Device
TSA Systems
US CBP Inspection Administration Systems

Click on '(View Context Diagram)' on the element page to review which other systems you element is identified as interfacing to, information exchanged and status of that interface. Note: Context Diagrams focus on a single central element for easy review.

Step 8 – Services

Click on 'Services' in the left Menu to view a list of ITS Services that the draft architecture includes. Services bring together pieces of the architecture (inventory elements and interfaces) to address a particular transportation service. Services are organized by package bundles from the ITS Architecture for Canada, and the draft Smart Corridor architecture includes those that relate to the Corridor needs identified as part of the project workshops (see Step 3) and focuses on those that the Region itself is involved in. Note: multiple instances of some Services may be defined to allow for a focused view from a particular perspective (e.g. province, agency).

Start by finding the bundle area(s) that relate to your experience (e.g. ATMS – Advanced Traffic Management Systems) and review those Services that are applicable to your agency.

CVO102-International Border Registration (NEXUS)

Status Existing

Diagram

Service Package Diagram

Description

This service package covers registration of travellers for the NEXUS Program for enhanced border clearance process.

Includes Elements

Traveller Information Device
TSA Systems
NEXUS Program

Click on the 'Service Package Diagram' link to view the interface diagram which illustrates the inventory elements involved and the information that is exchanged (including indication of status) required to deliver the service.
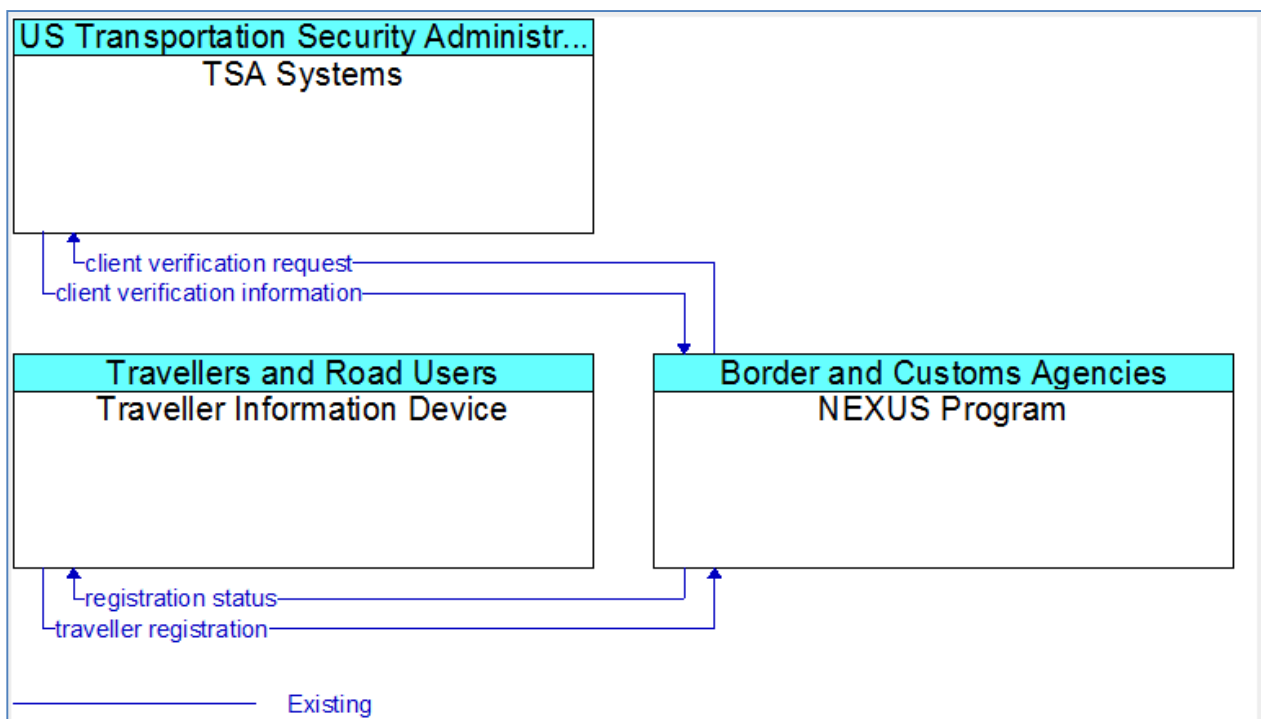
Step 9 – Other Agencies

Time permitting, please repeat Steps 5-8 for agencies that you work with.