Department of National Defence

SAMSON Technical Demonstrator
Phase I
SD006 - Trial Report

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1.0   Introduction

This document describes the SAMSON TD Phase I trial target, approach, and results. According to the SAMSON TD contract, Bell Canada was to deliver a functionally complete system to a lab environment at a designated DRDC research facility at the end of phase I. In place of a laboratory-based deployment, SAMSON was demonstrated at a military engineering exercise, namely, Empire Challenge 2010 (EC2010).

A Military Engineering exercise provides an opportunity to test new technologies in theatre-like conditions. Empire Challenge is a C4ISR exercise that allows new technologies related to information gathering and information management to be deployed.

Participation in this exercise was approved by the SAMSON Project Manager and was taken to be the new target deliverable for SAMSON phase I. In order to participate in EC2010, some amendments[1] to the original Phase I functionality were required and the phase I end date was delayed to accommodate the development, test and deployment activities for EC2010.

2.0   Target For Trial

The SAMSON Phase I development target, as originally defined in the SAMSON TD contract, called for a specific set of functionally complete capabilities. However, due to budgetary shifts, certain core capabilities were deferred to phase II. For EC2010, some phase I capabilities were not trialed, while new capabilities were added to the phase I target and demonstrated at EC2010.

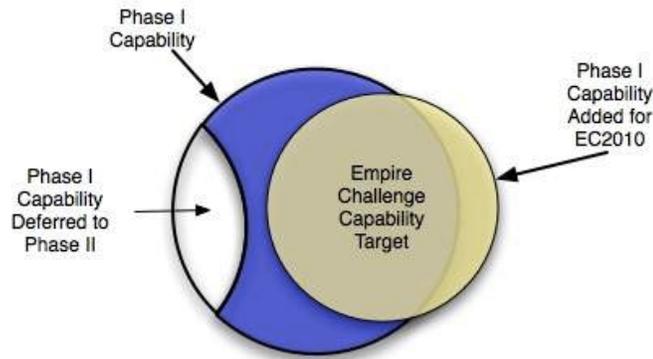[1] Please see SAMSON TD contractual amendment#3 for additional details.

Figure 1: SAMSON Phase I Capability Set

2.1   Features Tested

The following table identifies the features tested as part of Empire Challenge.

From the Original Phase I Target	Added to the EC2010 Capability Set
- XMPP-based secure message communication architecture and data exchange. - Identity Provisioning and usage via the SAMSON infrastructure. - Virtualized data segregation and endpoint security via virtualization at the desktop. - Collection of trusted audit records for all policy enforced and security transactions. - Secure Data Labelling and Interpretation of labelled data in a security policy context. - Data Protection via a unified policy decision point. - Data Protection for file sharing, instant messaging, web and email.	- Support for the Transverse IM client - XMPP-based administration of users and caveats - Increased stability and robustness - Web-based audit review interface - System monitoring tools

2.2   Features Not Tested

The following capabilities, although delivered as part of the revised phase I target, were not tested in the EC2010 operational environment:

- SAMSON protected database access

2.3   Scenarios and Test Cases

Rather than a canned test environment, the EC2010 exercise was an operational SECRET coalition environment. The testing performed against the SAMSON environment during the exercise took the form of typical use cases using actual data originating from other contributors to the exercise. Analysis of the data in an operational context was demonstrated for coalition members to show the COI and caveat separation capabilities of the solution.

3.0   Approach

SAMSON was trialed as an active participant to the EC2010 exercise, leveraging much of the same infrastructure and working in parallel with other operational systems. Data was manually transferred from the primary network to a segregated enclave for SAMSON activities. Exercise data was imported from operational sources, labelled and then used in demonstration use cases for project stakeholders.

3.1   Participants

Representatives from Bell Canada and DRDC NIO active participants to the Canadian contingent at EC2010 operational sites.

3.2   Tasks and responsibilities

Bell Canada and DRDC NIO staff were directly responsible for administering SAMSON in each of the exercise locations. The SAMSON team was supported by DND/CF staff responsible for providing infrastructure and connectivity between EC2010 sites. Bell Canada staff were responsible for maintaining SAMSON in an operational state during

the duration of the exercise and DRDC staff were responsible for running the demonstrations and use cases to meet the EC2010 objectives.

3.3   Set-up and facilities

The SAMSON infrastructure was deployed to two locations:
- A Forward Operating Base (FOB) located at Fort Huachuca, Sierra Vista, Arizona, US (AZ); and
- A simulated HQ facility located at the Louis-St Laurent (LSTL) Building, Gatineau, PQ, Canada

The LSTL site was deemed the primary location with all local and remote workstations leveraging this infrastructure. The remote AZ location had both connectivity to the primary site plus the ability to run in an isolated mode using a purely local (redundant) SAMSON deployment and thus independent of external connectivity.
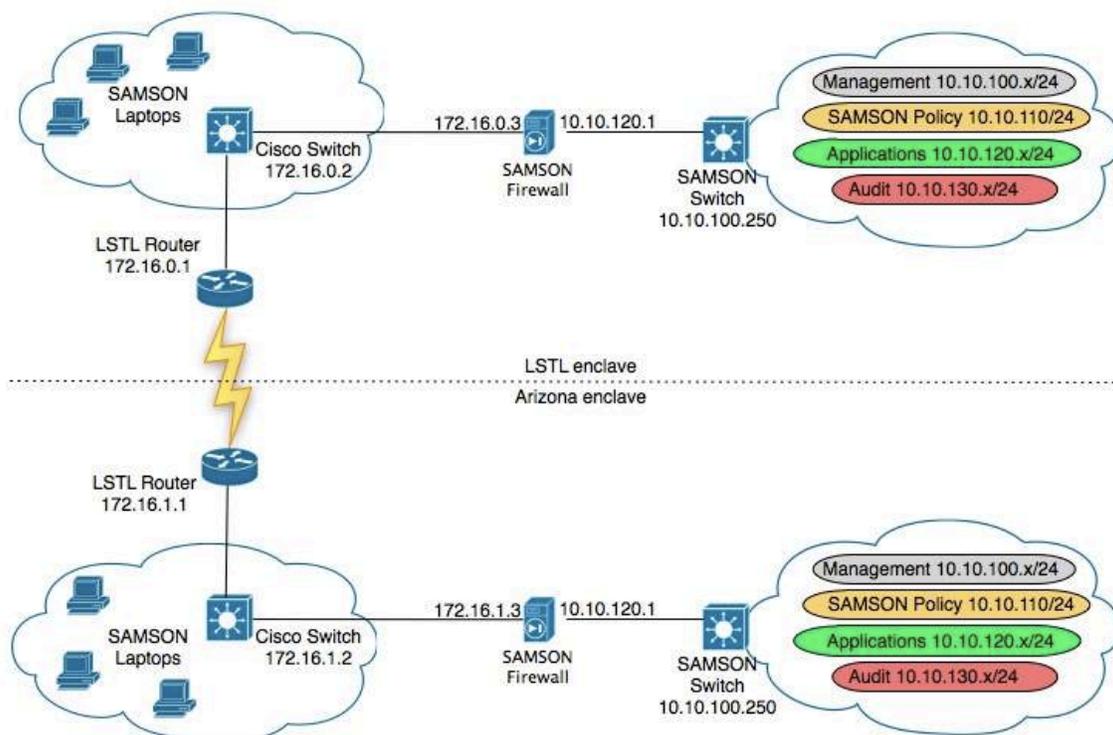

Figure 2: The SAMSON EC2010 Architecture

3.4   Metrics and Evaluation Criteria

The goals of the EC2010 exercise were to demonstrate new capabilities to coalition and identify any defects in the existing solution. Evaluation criteria were loosely defined since, as an engineering exercise, the expectation was that each solution should be pushed to work under conditions that closely match operational conditions. Success metrics were defined in the following terms:

- Did the solution remains operational for the majority of the exercise?
- What proportion of the features demonstrated worked as excepted?
- How much engineering / maintenance was required to remain operational and a contributing member of the coalition force?

3.5   Needs

At each location, SAMSON required: power, connectivity between sites and access to exercise-based data. Beyond those requirements, SAMSON remained a self-contained solution and remained, by design, independent of the rest of the EC2010 infrastructure.

3.6   Staffing and training

Both locations required staffing during the setup and operational phases of the exercise. In rotating shifts, 4 Bell Canada and 5 DRDC NIO staff were required to set up, manage and demonstrate SAMSON capabilities.

3.7   Schedule

The exercise took place according to the following schedule.

Date (2010)	LSTL site	Arizona Site
July 12 – July 17	Setup SoS[2] (Bell)	
July 19 – July 23		Setup gSOS (Bell)
July 26 - July 30	Configuration and Test	Configuration and Test
August2 – August6	Operational Exercise	Operational Exercise
August9 – August13	Exercise & VIP Week	Exercise & VIP Week

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[2] SoS is the deployment name for the LSTL SAMSON installation, gSoS is the deployment name for the AZ installation.

3.8   Data captured during the trial

All data capture during this operational exercise were labelled SECRET and are not releasable outside the demonstration facilities.

4.0   Results

The SAMSON EC2010 trial was deemed to be very successful. The following points are notable:

1. The SAMSON solution remained operational and stable for the full duration of the EC2010 exercise and beyond. The use of local and remote infrastructure allowed SAMSON to operate in the face of intermittent connectivity.
2. All features were demonstrated during the trial and there were no defects encountered that limited the ability for SAMSON to contribute to the challenge.
3. The exercise uncovered some minor configuration and operational defects that have been logged in the SAMSON bug tracking system and will be addressed in the next phase of development.
4. The SAMSON infrastructure remains available and continues to be used for demonstrations.