

NationalHealthCare.gov – A Network-Centric Software-based System of Systems

Architecting

Due on April 7, 2015 by Midnight

Assume that the U.S. Government has awarded a \$680 million 3-year contract to your company to develop the `NationalHealthCare.gov` network-centric software-based system of systems.

The problem and expected solution are briefly described below.

Problem: The Patient Protection and Affordable Care Act (Obamacare) was signed into law on March 23, 2010. “Obamacare's health care reform does a number of important things including offering Americans a number of new benefits, rights, and protections in regards to their healthcare and setting up a Health Insurance Marketplace where Americans can purchase federally regulated and subsidized health insurance.” The problem: How can millions of Americans purchase federally regulated and subsidized health insurance?

Expected Solution: Develop a network-centric (cloud-based) software system to enable thousands of Americans to concurrently shop for a healthcare insurance policy and buy one by using a web browser on a network-connected desktop or laptop computer or a mobile device.

Based on the requirements specified in your Group's Requirements Specification Document (RSD) [Group Project 1], your Group is asked to execute the process of **architecting** and develop a network-centric **architecture** specification for your proposed `NationalHealthCare.gov` system.

You are required to describe the network-centric **architecture** of your proposed NationalHealthCare.gov system using the following DoDAF models:

Group Member 1 shall create the following 3 DoDAF Models	
	<ol style="list-style-type: none"> 1. OV-1: High-Level Operational Concept Graphic 2. OV-2: Operational Resource Flow Description 3. OV-5b: Operational Activity Model
Group Member 2 shall create the following 3 DoDAF Models	
	<ol style="list-style-type: none"> 1. SV-1: Systems Interface Description 2. SV-2: Systems Resource Flow Description 3. SV-4: Systems Functionality Description
Group Member 3 shall create the following 3 DoDAF Models	
	<ol style="list-style-type: none"> 1. SvcV-1: Services Context Description 2. SvcV-2: Services Resource Flow Description 3. SvcV-4: Services Functionality Description

Notes:

- Study [DoDAF Volume 2](#) to learn about each type of DoDAF model (diagram).
- Microsoft Visio or a tool of your choice can be used to create the DoDAF diagrams.
- DoDAF diagrams that cannot fit in a legal size paper can be included in an HTML file for viewing under a web browser.
- You can create your Project 2 report either entirely in Word or entirely in HTML or a combination of Word and HTML.
- Each student is required to create 3 DoDAF models (diagrams) as indicated above. A group of 2 members shall create the models for Group Members 1 and 2 or 1 and 3 or 2 and 3.

Submission Requirements:

1. Submit on or before the due date, your *Architecture Specification Document*, professionally prepared in **Microsoft Word and/or HTML** and created with respect to the structure given on the last page. Specify percentages of contribution of project team members in Appendix B with each team member's agreement. (**Word is required so that grading feedback can easily be marked.**)
2. Name your *Architecture Specification Document* in Word as GroupN.docx, where N is your group number. Make sure that you specify your Group Number on the title page together with team member names.
3. E-mail your GroupN file to Dr. Balci, balci@vt.edu before midnight on the due date.

Honor Code

All work is to be done under the provisions of the Virginia Tech Graduate Honor System (<http://ghs.graduateschool.vt.edu/>). A CS5704 student is **not** allowed to see in any way, access by any means, or to have in possession of any part or parts of the CS5704 Group Projects from earlier CS5704 or related courses. Violation of this code is a serious CS5704 Honor Code violation and shall be subject to prosecution under the Graduate Honor System.

Architecture Specification Document Structure

Your *Architecture Specification Document* should be structured as follows and prepared professionally.

Title Page (Include: report title, company name and logo, group number, author names, and date in a creative layout)

Executive Summary

Table of Contents (With page numbers. No page number is displayed on the Title Page. Number Executive Summary page as ii and Table of Contents page as iii. Section 1 Introduction first page number must be 1. Center page numbers on the bottom Footer.)

1. Introduction

(Minimum 2 pages, single line spacing. Write this section by answering the following questions: What is the problem? Why is the problem so important to solve? Is there an opportunity to solve the problem and make money by selling the solution? Give a brief description of your business model and how you plan to establish a profitable business. What kind of a solution provider does your company want to be?)

2. Architecture Specification

(Give an overview of this section here in a paragraph.)

(In each subsection below, provide a written description of each DoDAF product (graphic) and refer to it with a Figure number. Each graphic must have a Figure caption below it as centered.)

- 2.1 OV-1: High-Level Operational Concept Graphic
- 2.2 OV-2: Operational Resource Flow Description
- 2.3 OV-5b: Operational Activity Model
- 2.4 SV-1: Systems Interface Description
- 2.5 SV-2: Systems Resource Flow Description
- 2.6 SV-4: Systems Functionality Description
- 2.7 SvcV-1: Services Context Description
- 2.8 SvcV-2: Services Resource Flow Description
- 2.9 SvcV-4: Services Functionality Description

3. Concluding Remarks

References

Appendix A: Meeting minutes, attendance, and project management related information.

Appendix B: Percentages of contribution (enter your name as your signature)