

# 1 Introduction

## 1.1 Purpose

This technical design document addresses the software architecture, adherence to guidelines, standards and best commercial practices, and system design concepts used in the design of the UI SIDES system.

The document is ordered in the following way.

- Section 2 describes the functional flows for the system, taking the Use Cases and describing them in flow based diagrams.
- Section 3 describes the web site flows which allow insight into what the web site is going to look like and the flow between pages.
- Section 4 describes the Messaging Framework, the framework of how messages are going to be passed between the connectors via the Broker.
- Section 5 describes the Security Framework, the framework of how messages are going to be protected from outside threats.
- Section 6 describes how the Messaging Framework and Security Framework come together to pass messages back forth between connectors via the Broker.
- Section 7 describes the Web Services design of the Broker including pseudo code and class diagrams.
- Section 8 describes the logical data model for the Broker.
- Section 9 describes the standards, best practices and patterns used in the Broker as described in Appendix A of the Statement of Work.
- Section 10 describes the third party tools used in the construction and testing of the SIDES system.
- Section 11 describes the appendices for the document, including the System Design to Functional Design traceability matrix.

The next sections of the Introduction contain diagrammatic views of the software architecture of the system, showing separation, communication, and identifying all interfaces in Section 1.2 and 1.3. These diagrams also shows the specific J2EE technologies used in each layer, as well as the physical layout of the proposed deployment.

The application is platform independent to the largest extent possible by not using any Web Sphere specific J2EE extensions and using SOAP 1.1. The system is very modular isolating functionality between subsystems and services, and using ‘information hiding’ by use of well defined interfaces between each system.

The ITSC has investigated the Modernized e-File (MeF) transmission system, which encompasses the use of web services in the transfer of Tax data using XML schemas. The XML schema sets are under the control of the Tax Implementation Group for E-commerce Requirements Standardization (TIGERS), which falls under the auspices of

ANSI accredited standards committee X12. UI SIDES, likewise, will use XML schemas, but specific to separation request and response standard formats and conforming to the XML W3C standard. As part of its investigation, ITSC has also incorporated feedback from TIGERS participants regarding XML structures and request/response schemas. The UI SIDES design does not preclude any state participating in the MeF from SIDES participation.

## ***1.2 Overview of Architecture***

This section provides a high level overview of the SIDES architecture. Figure 1 depicts the system context, showing the SIDES Broker architecture and the technical (web service) approach for communication by the State and Employer/TPA connectors.

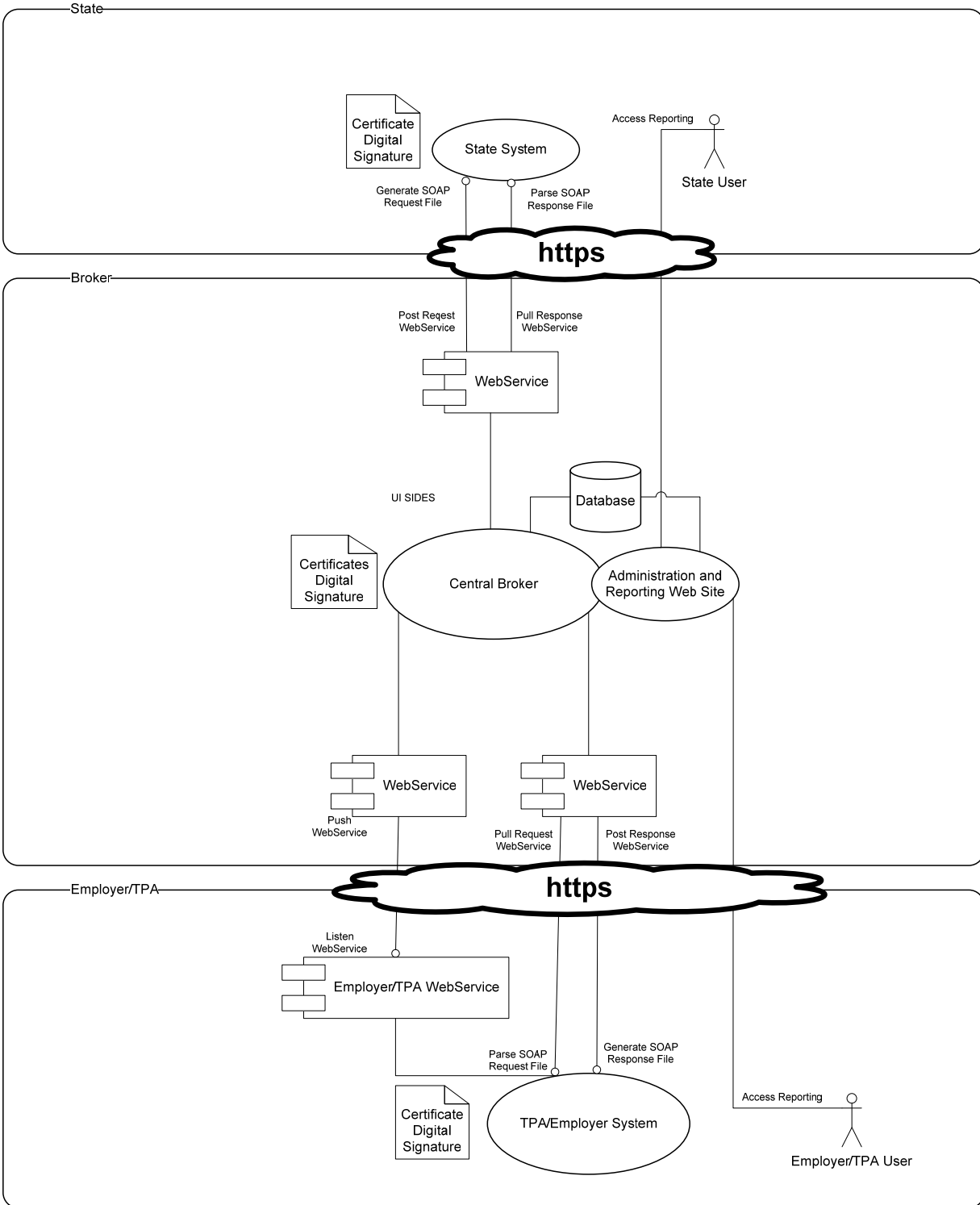


Figure 1 – Sides Broker Architecture Showing State and Employer TPA Connectors

### 1.3 Overview of Software Architecture

This section provides a diagrammatic view (Figure 2) of the software architecture and its layers, each layer’s responsibilities and functions, how layers communicate with each other as applicable, and all interfaces, external and internal. Figure 2 also provides the various layers mapped to specific J2EE technologies and how the architecture implements a service-based approach.

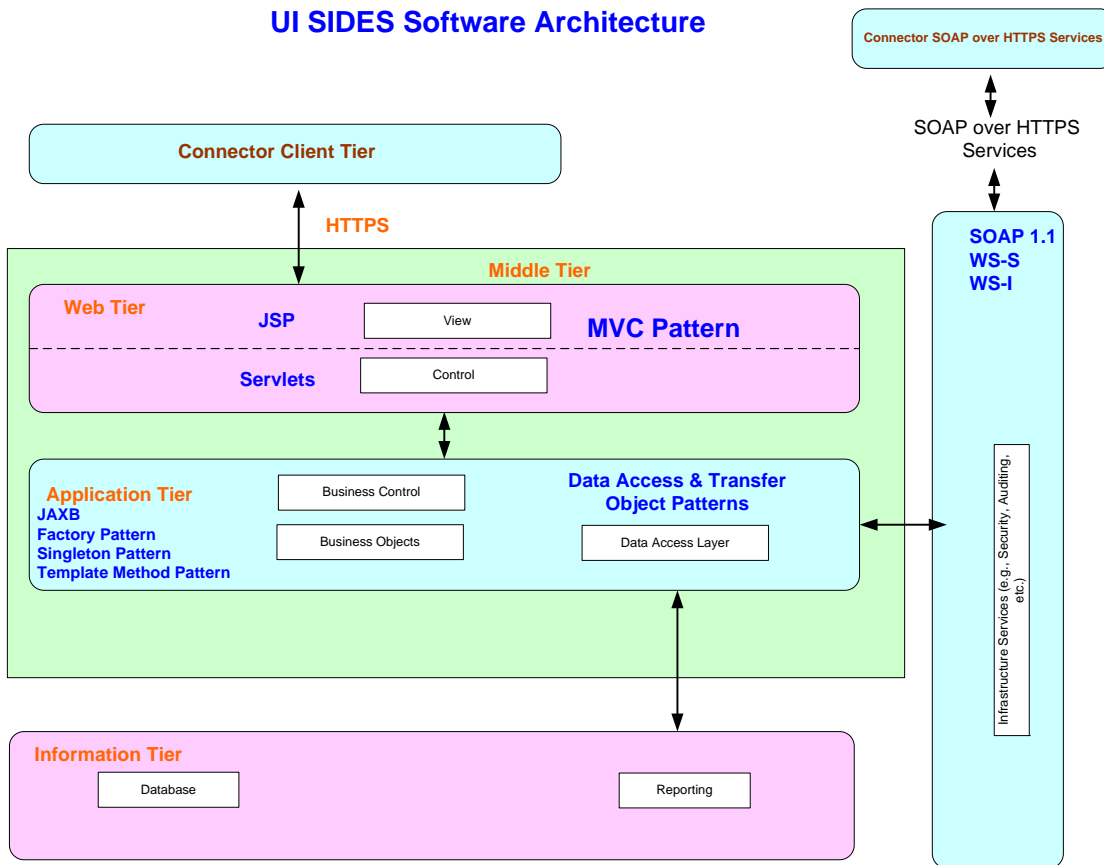


Figure 2 – SIDES Broker Design Layers and Technologies

### 1.4 Overview of Hardware Architecture

This section provides a graphical depiction of the SIDES Broker physical architecture and a high level mapping of the software architecture to the hosting system (See Figure 3)

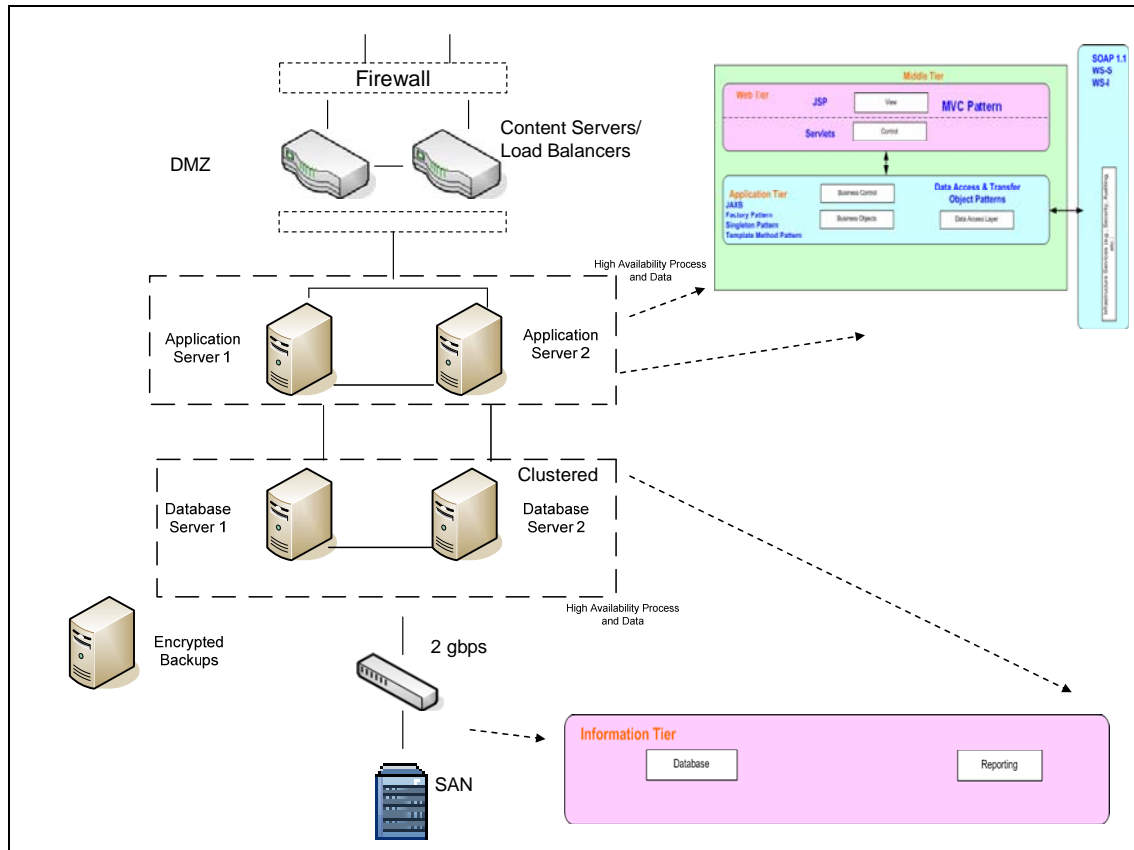


Figure 3 - A mapping of Broker Software Architecture to Physical Implementation