**DoD SOA Project Progress Report**

- **Tasks Completed:**
  - Developed outline for final report
  - Researched and identified project direction and scope
    - DoD System to interface land, air, and sea systems
    - Minimum 2 interactive services for each system
  - Developed initial draft *Executive Summary* and *Introduction*
  - Developed initial schedule

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- **Initial Project:**
  - Communications System:
  - Targeted to Air, Land, and Sea systems.
    - Input XML from Host.
    - Includes encryption of message.
  - Pilot Project Marine Corp
    - Extend to Army, Navy, and Air Force communication systems.
Abstract Architecture Design:

Tasks Scheduled to be completed by next report:

- **Group:**
  - Finalize project scope
  - Create and maintain terms and keywords document
  - Choose project name

- **Doug:**
  - Research cost estimation of project
  - Research system requirements

- **Matt:**
  - Develop project schedule
  - Convert schedule into Microsoft Project Chart

- **Leedra:**
  - Research SOA implementation risks (Identification, Analysis, Mitigation)
Why is SOA important?

- Supports evolving DoD Migration Plan
  - Easy venue for associating Services to Task Orders
- Customers want to buy unique services once and deploy across the enterprise as needed as a common service
- Individual software services become **building blocks that can be reused** in developing new services
- SOA is a key enabler for DoD transformation to a net-centric operating environment (Net-Centric Operations Warfare (NCOW) Reference Model 1.1)

**Provides Standard Interface, Building Blocks, and Mission Integration Focus**

Leedra’s SOA Issues Investigation

- Services
  - Identification
  - Interoperability (data, transport protocol, and security)
  - Workflow
  - Deployment
  - Service Level Agreement (SLA)
- SOA Governance
- Information assurance
- Smart pull data approach
- SOA implementation in resource constrained tactical environment
- Migration of legacy applications to SOA without disrupting current operations
Reference Architecture Layer Descriptions

- **Operational Systems Layer** – This layer is made up of existing application software systems such as existing monolithic applications, including J2EE and .NET applications, legacy applications and systems, and existing databases, etc.,
- **Service Component Layer** – This layer contains software components that realize services.
- **Services Layer** – This layer consists of business services that are exposed to external service consumers.
- **Business Process Layer** – This layer composes and orchestrates services exposed in the Services layer into flows to support specific use cases and business processes.
- **Consumer Layer** – The consumer layer a.k.a presentation layer, provides the capabilities required to deliver services to the end users.
Reference Architecture Layer Descriptions (cont)

- Integration Layer – key SOA enabler:
  - Provides capability to mediate, route, and transport service requests from service requester to the correct service provider.
  - This is the layer that provides communications, invocation, and quality of service between adjacent layers in an SOA.
- Quality of Service Layer:
  - This layer ensures that an SOA meets its requirements with respect to reliability, availability, manageability, scalability, and security.
- Data Architecture & Business Intelligence Layer:
  - This layer ensures the inclusion of key considerations pertaining to data architecture that is used as a basis for the creation of business intelligence through data marts and data warehouses.
- Governance Layer:
  - This layer covers all aspects of business operational life-cycle management in SOA. It provides guidance and policies for making decisions about an SOA and managing all aspects of an SOA solution, including capacity, performance, security, and monitoring.

DoD SOA Project Progress Report

- Scope of project may change based on Leedra’s meeting with John Dinh, System Engineer, at Raytheon.
- We may be able to design the architecture so that services can be added on demand:
  - Fire Mission
  - SA (situational awareness)
  - Demo:
    - Possible Demo at Raytheon in the MSI demo room.
    - VPN Demo using systems at Raytheon