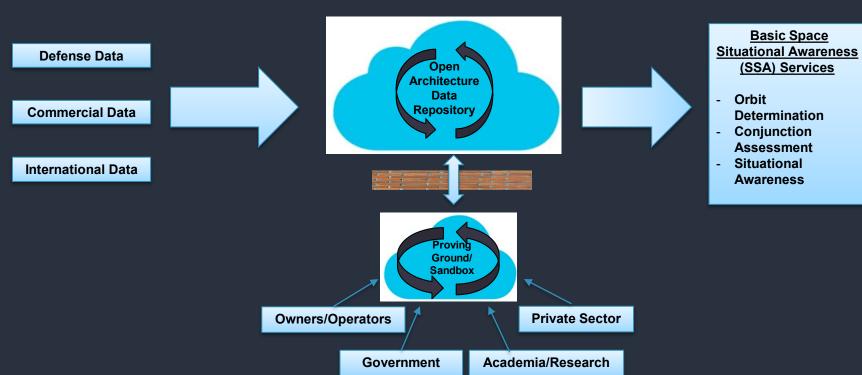
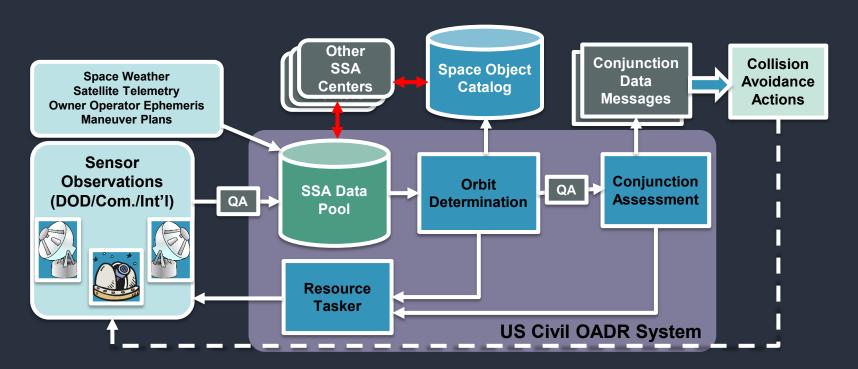
# **OADR Prototype Overview**





# **Notional SSA Safety Process**

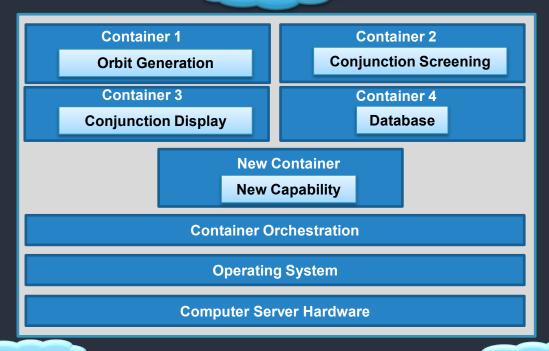




## **OADR Cloud Software Architecture**

Containerized services











Scale out to more data, capabilities and users by adding servers and containers

### Advantages of a Containerized Microservice Architecture

#### Containers package software with libraries and operating system required to execute

- Portable to any computer
- Efficient
- Allow developers to create and deploy software applications faster
- More secure and reliable
- Avoid cloud vendor lock-in

# <u>Microservices</u> break a complex software application into small, specialized services that <u>communicate over a common interface</u>

- Can update one part of software without affecting the whole application
- More reliable
- Faster development, testing and deployment



This is the industry standard way to develop modern data systems in the cloud.

## OADR Prototype Data System



Data

Warehouse

(Druid.Hive)

Data Storage

(HDFS, S3,

Ceph)

Messaging

(Kafka)

Microservices

**Batch Analytic Environment** 

Streaming Analytic Environment

#### Data Scientist

**Batch Jobs** 

(Yarn, Argo

Workflows)

Streaming Jobs

(Spark/Tez)

\$ \$ \$

Set up and

Analyze / process data at scale

**User Applications** 

Visualization

Tools

(2D/3D, ...)

Search Tools

(ElasticSearch

Solr, ...

Interactive

Analytics (Zeppelin,

Jupyter)

Applications

(C2, Mission

Planning, ...

Monitoring

Dashboard

(Grafana)

**Batch** Data

Data

**DevOps** 

**Engineer** 

Data Librarian



manage data workflows. templates, and triggers

Ingest Triggers

Integrated CI/CD pipelines

Service Discovery

(Swagger)

**Data Ingest** 

(Argo Events)

FLAME-MP

Services

Ingest

Orchestration

(Argo

Workflows)

Workflow

Templates

Code Generation DevOps Container Toolchain Services Orchestration

Analytic

Consume data products

**Mission** 

User(s)

Can be deployed to any cloud provider or on-prem

Develop and deploy apps / analytics



**Analytic** Developer