



# ***EGS Data Exploitation (DEX) Platform***

***Carlos Rexach  
Enterprise Ground Services***

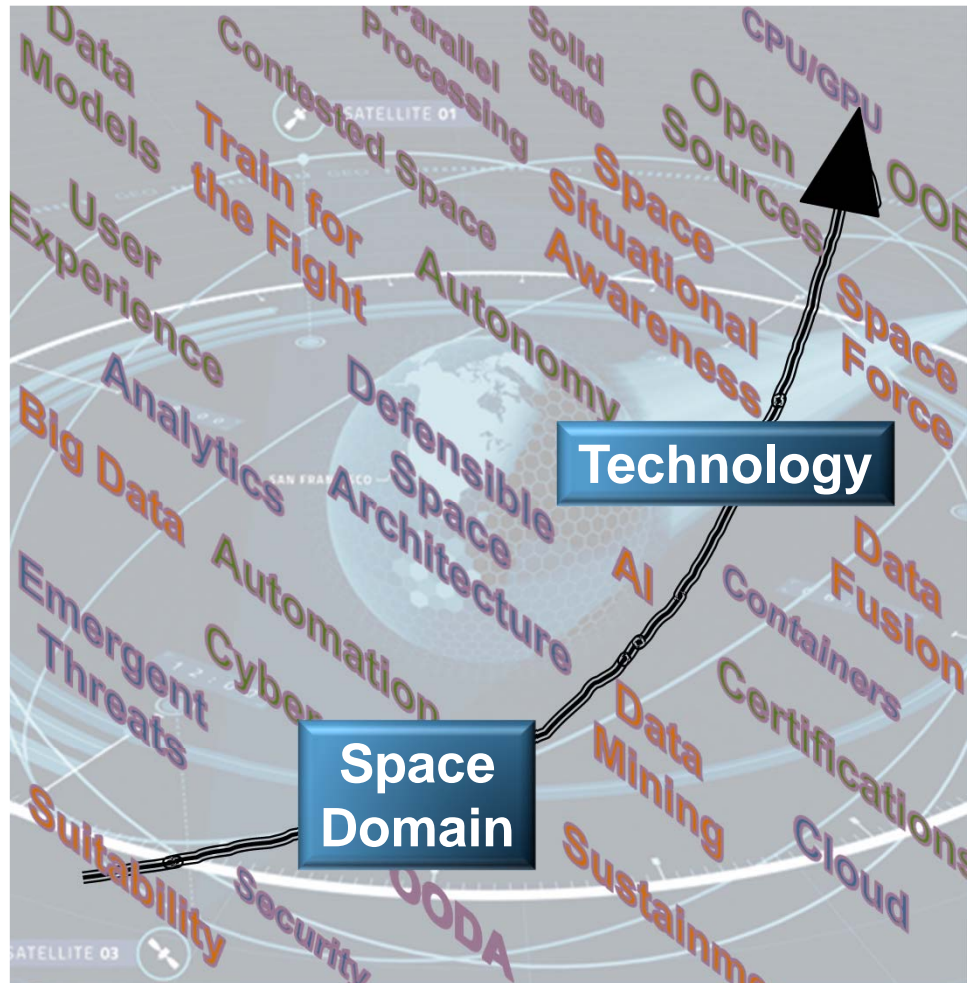
***Feb 2018***



# ***DEX Objective***

*Develop an architecture and prototype for an EGS Data Exploitation service that aligns to the framework of the Space Warfighting Construct*

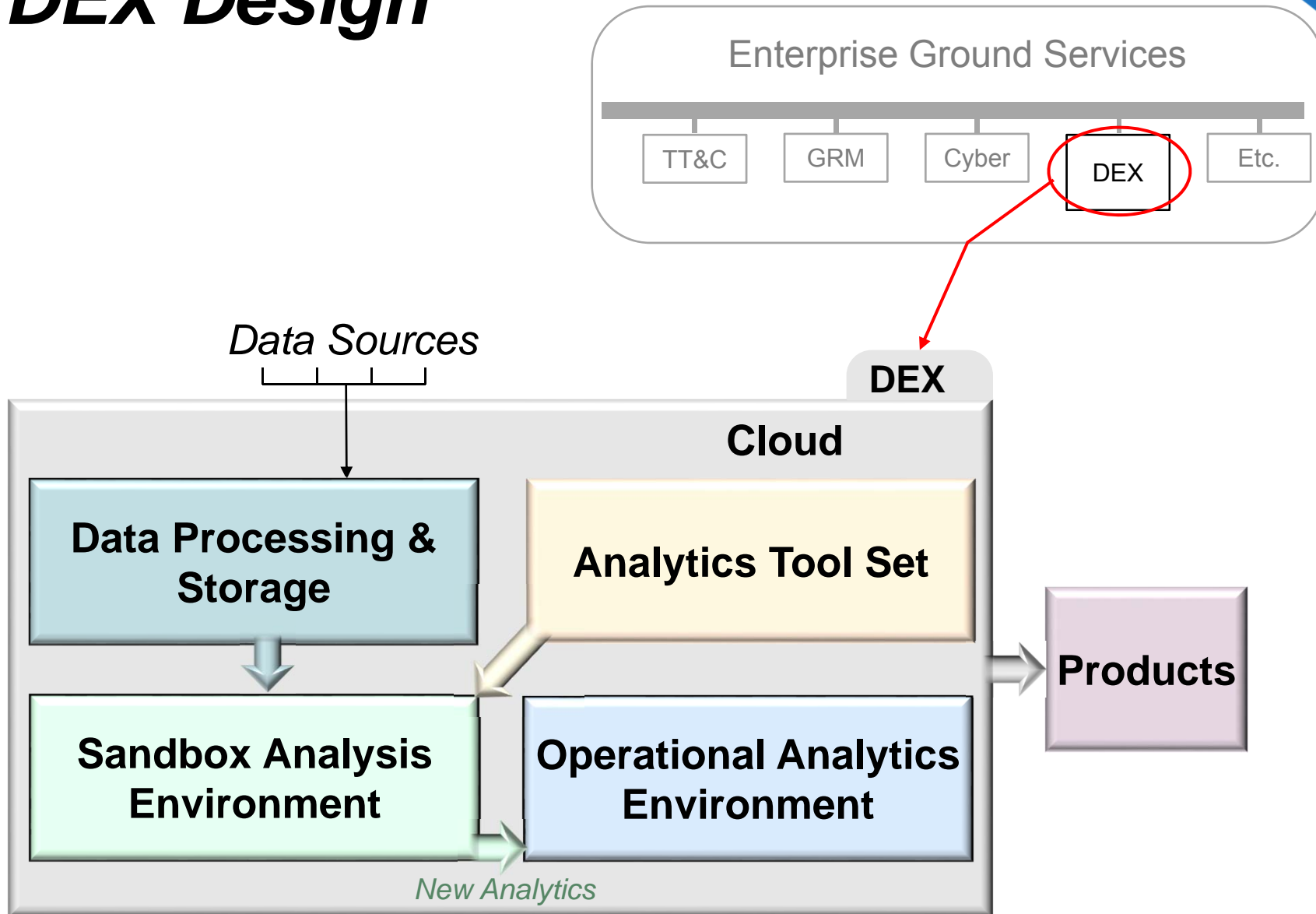
# Architecture and Design Tenets



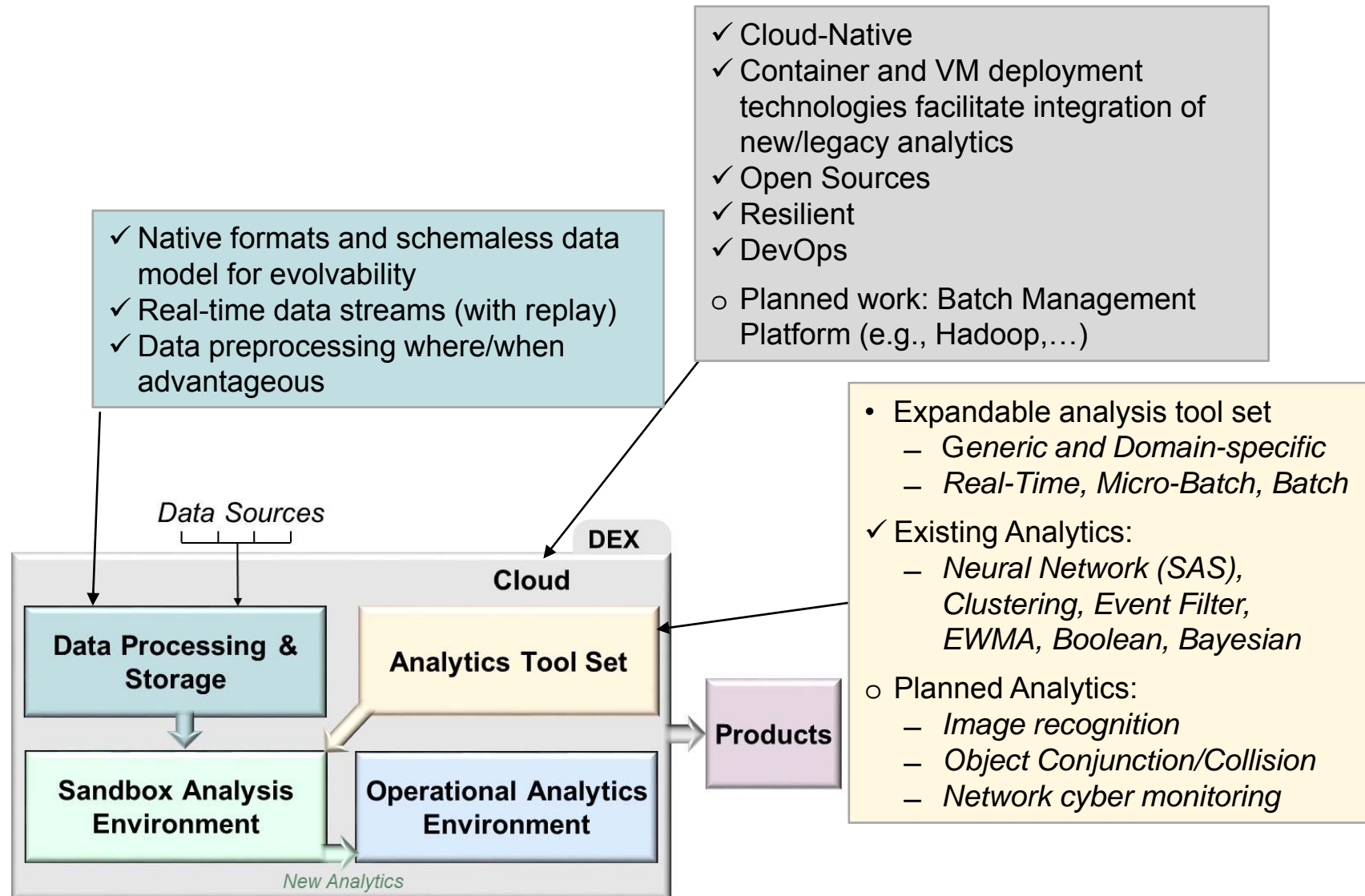
Managing change is central to DEX architecture and design

- **Responsive**  
*... to changes in operational needs*
- **Evolvable**  
*... readily adapt to new technologies*
- **Resilient**  
*... always available*

# DEX Design



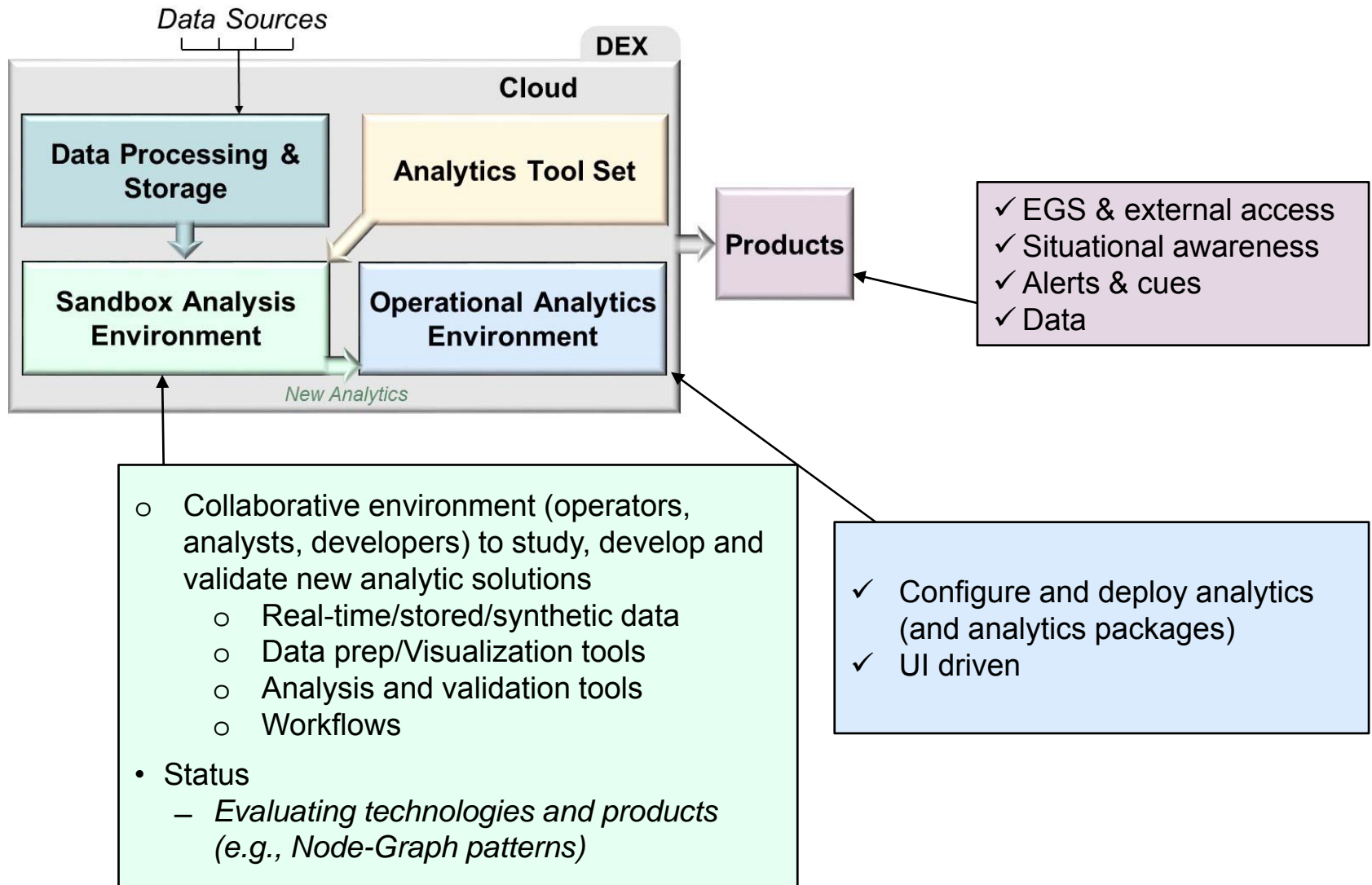
# Status



✓ Complete    • Update as required    ○ Planned Work

EWMA = Exponential Weighted Moving Average  
SAS = Satellite as Sensor

# Status



✓ Complete    • Update as required    ○ Planned Work

# Roadmap



## ✓ Iteration 1

- ✓ *Architecture/Design Foundation*
- ✓ *Cluster and Container Management*
- ✓ *Web API*
- ✓ *Data Storage & Retrieval*
- ✓ *Demo*

## ✓ Iteration 2

- ✓ *Analytics Integration: SAS, Cluster, Event Manager*
- ✓ *Analytic Threads/Workflows*
- ✓ *Demo: Multi-Sate EMI detection*

## ✓ Iteration 3

- ✓ *Data Streams & Streaming API*
- ✓ *Operational Analytics Environment*
- ✓ *Analytics Integration: EMA, Boolean, Bayesian*
- ✓ *DevOps*
- ✓ *Demo*

## ☐ Iteration 4

- *Sandbox Analysis Environment*
- *Analytics Integration: Conjunction/Collision, Network Cyber*
- *Demo*
- *Plug Fest*
- *EGS 1.x Integration*

## ☐ Iteration 5

- *Big Data Batch Management Platform (ex., HADOOP)*
- *Demo*
- *Update EGS DEX Service*



# Take Away

- DEX is well on its way to support the Space Warfighting Construct
  - ***Responsive***
    - ✓ DEX environments enable users to study, develop and deploy analytics solutions to emergent requirements
  - ***Evolvable***
    - ✓ Containers and VM technologies, open source software, and schemaless data model facilitate integration of new capabilities
  - ***Resilient***
    - ✓ Cloud computing