



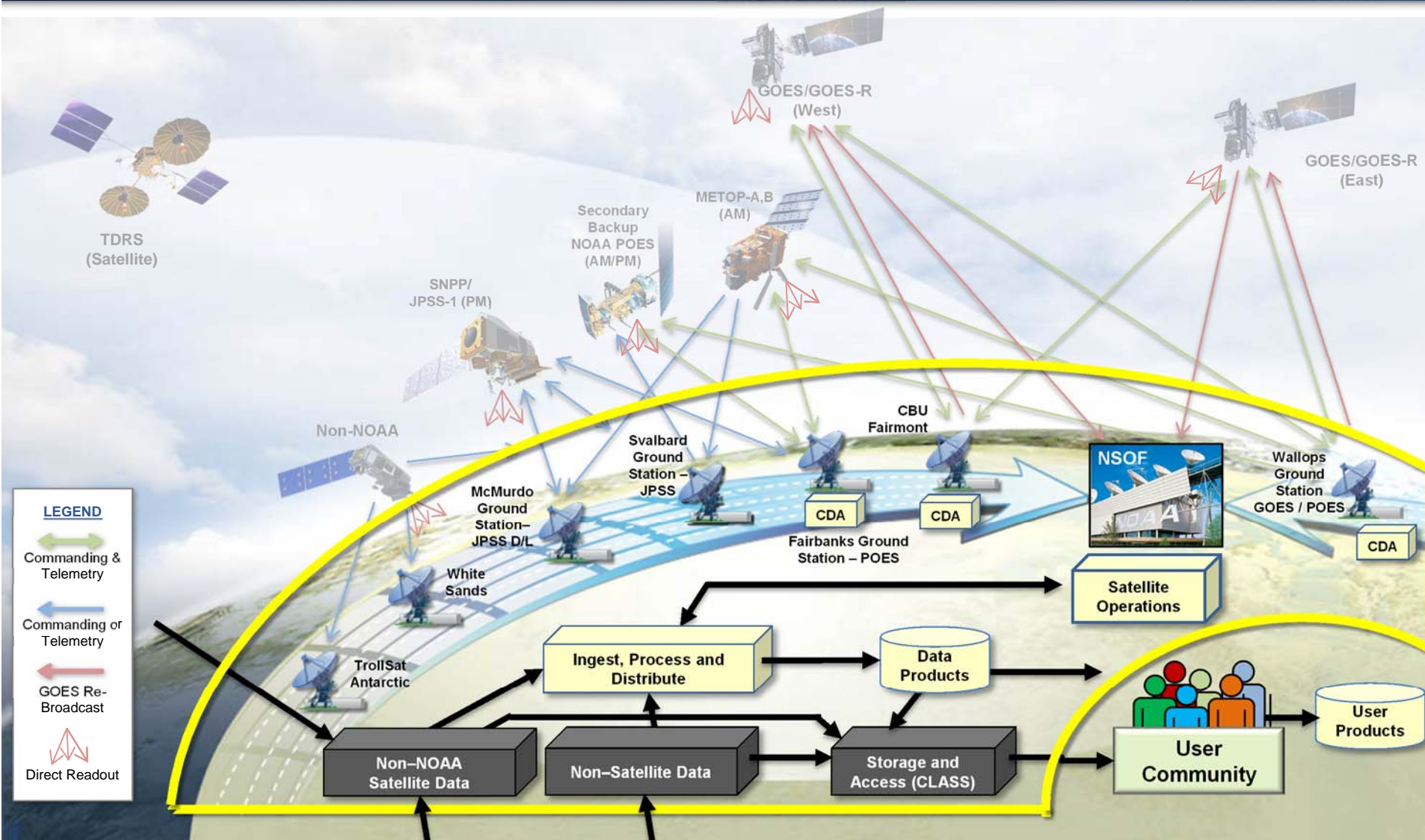
GEARS Architecture Overview

Georg Contag
Branch Chief, System Engineering
March 15th, 2017





GEARS Architecture NESDIS Ground Enterprise (NGE)

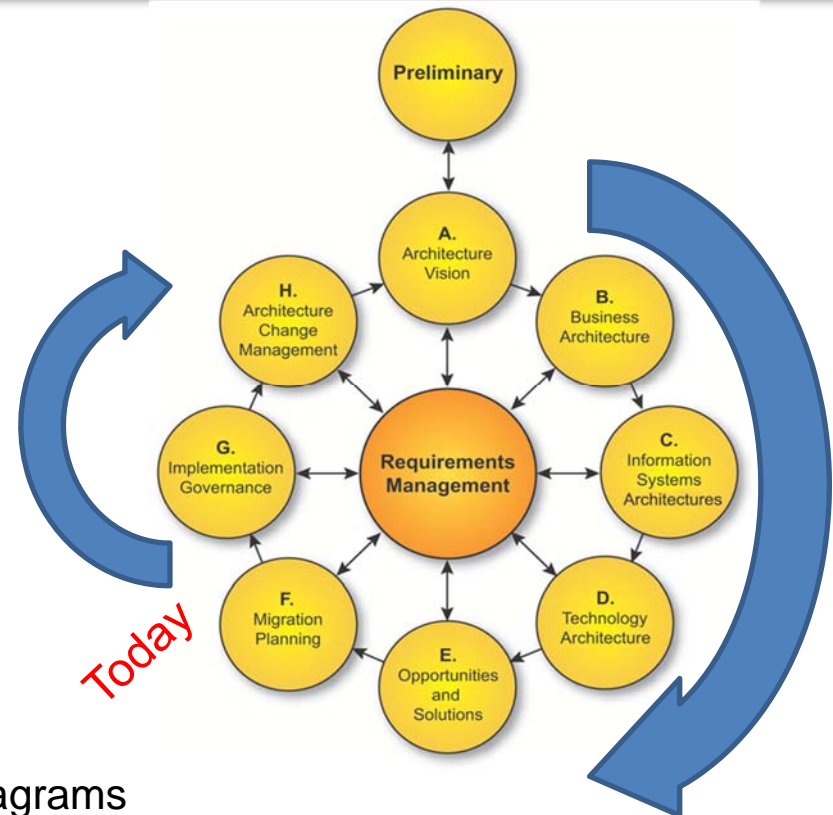




GEARS Architecture Where We Have Been



- **Business Architecture (BA):**
 - Business Activities & Functions Inventory
 - Business Activity Tree
 - Node Connectivity Diagrams
- **Information Systems Architecture (ISA):**
 - “As-Is” Systems Inventory
 - “To-Be” Services Inventory
 - Data Model, Data Flow Analysis
 - Information Exchange Matrices
 - Systems Connectivity Diagrams
 - Business Function-to-System Relationship Diagrams
- **Technology Architecture (TA):**
 - Infrastructure Reference Model (IRM)
 - Applications Reference Model (ARM)



The Open Group
Architecture Framework
(TOGAF)
Architecture Development
Methodology (ADM)

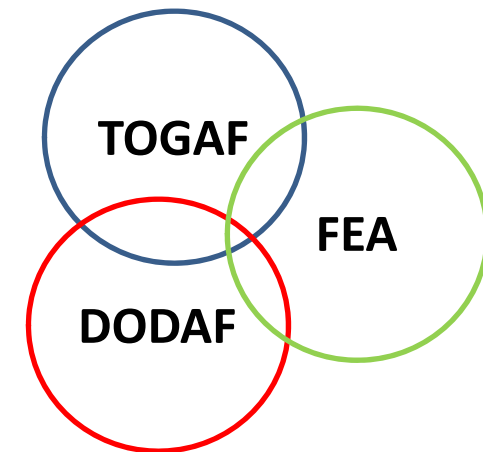


GEARS Architecture

The Key Deliverables



- **Enterprise Requirements**
 - Strategic Planning
 - NGE Level 1 Requirements (OSAAP)
 - NGE Level 2 Requirements (OSGS)
- **Transition & Sequencing Plan (T&SP)**
 - A Strategic Roadmap between “As-Is” System and “To-Be” Services
 - Sequence/Schedule of Initiatives
 - CBA & ROI of Investments
- **IRM & ARM**
 - Permitted, Prohibited, Preferred, Grandfathered, Retired, Waivered Elements
 - Applicable Technologies, Standards, Specifications, & Policies



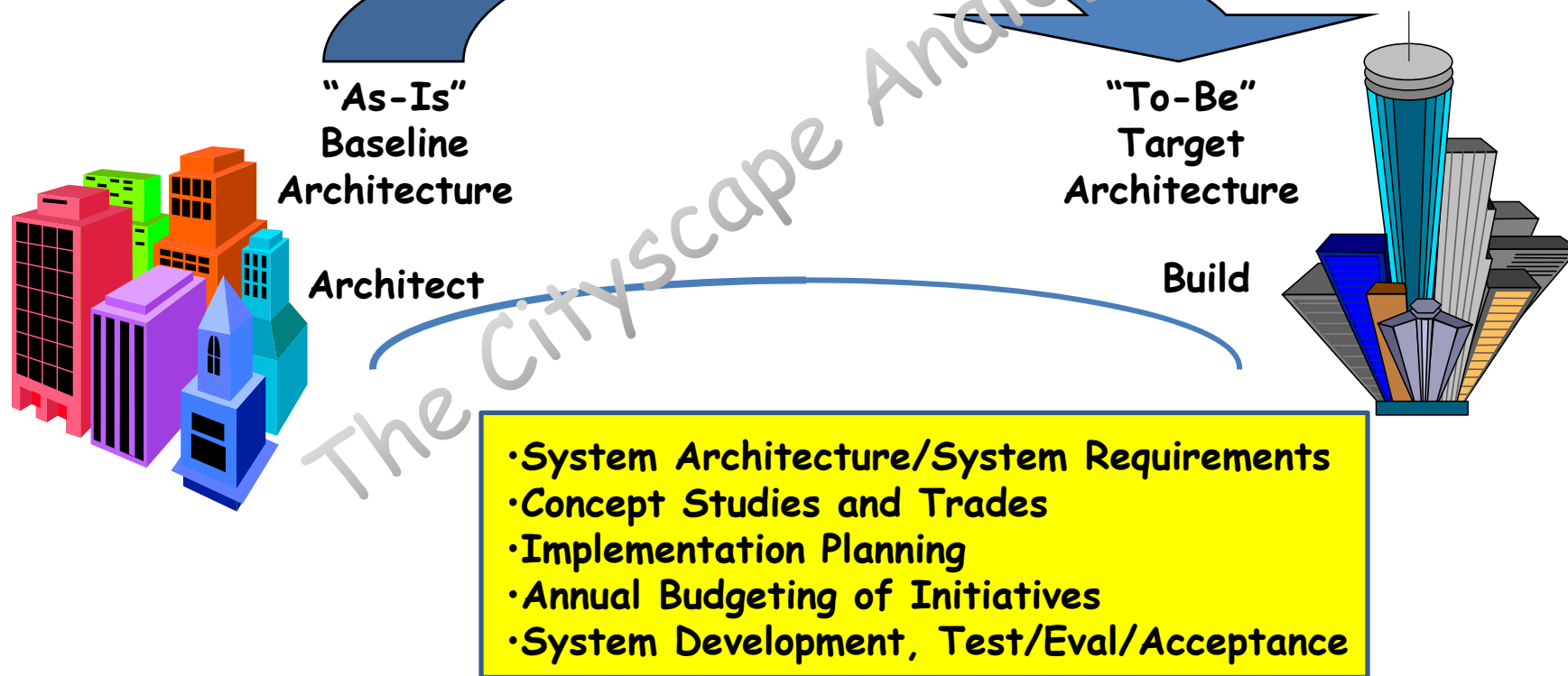
Used the Most Appropriate
Artifacts from Multiple
Architecture Frameworks



GEARS Transition Where We Are Going



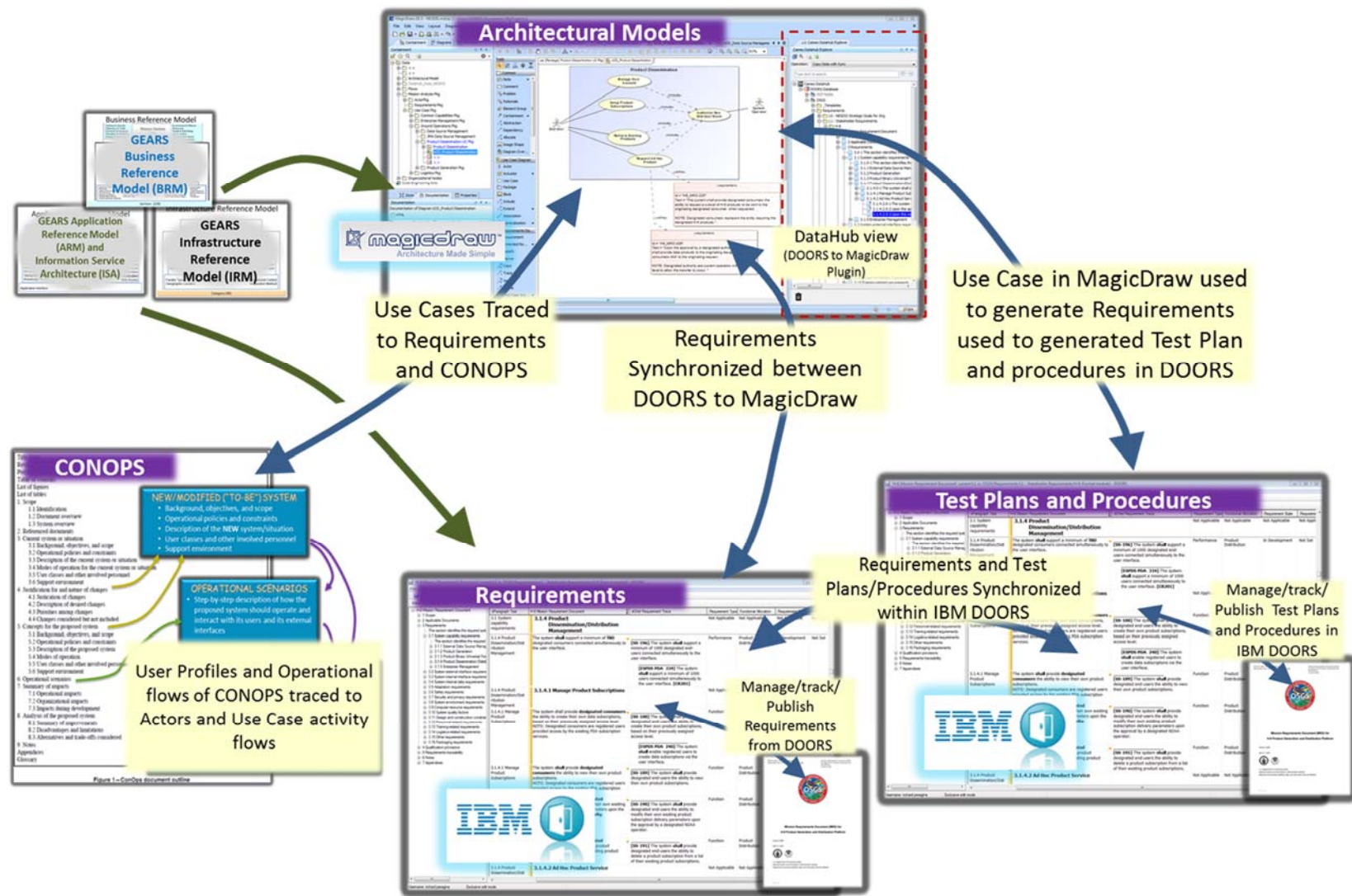
Transition



"Never Buy Another Stand Alone Ground System Again"



GEARS Transition iSEE





GEARS Architecture Lessons Learned



- **Successes**
 - Adoption of a Enterprise-Wide Modeling Framework & Tools
 - Engagement with Stakeholders
 - Right-Team with powerful mix of SE, EA, SME skills
 - Independent external EA process Review / Validation
- **Areas For Improvement**
 - More detailed understanding / socialization upfront of expected results, use and customer needs
 - Better Management of Stakeholder Expectations
 - Execution Plan was at too high a level to assess progress and manage execution risk
 - Engagement & Outreach Activities began too late to be completed by the end of EA Development project



GEARS Architecture Challenges/Issues



- **From Architecture-to-Implementation**
- **Culture Change**
- **Institutionalization of a new Governance Approach**
- **Operationalization of the Architecture**
 - Using & Applying the Architecture to better inform decisions
- **Dual/Parallel Operations**
 - Integrating the “Old” and the “New”

Always More Cultural than Technical



GEARS Architecture Get Off the Stage Slide



Advertisement for NOAA Evening Session, 12C

**For More Details, please
Attend the Wednesday Evening Session
“*NOAA/NESDIS Ground Enterprise
Architecture: Results, Lessons Learned, and
Panel Discussion*”**

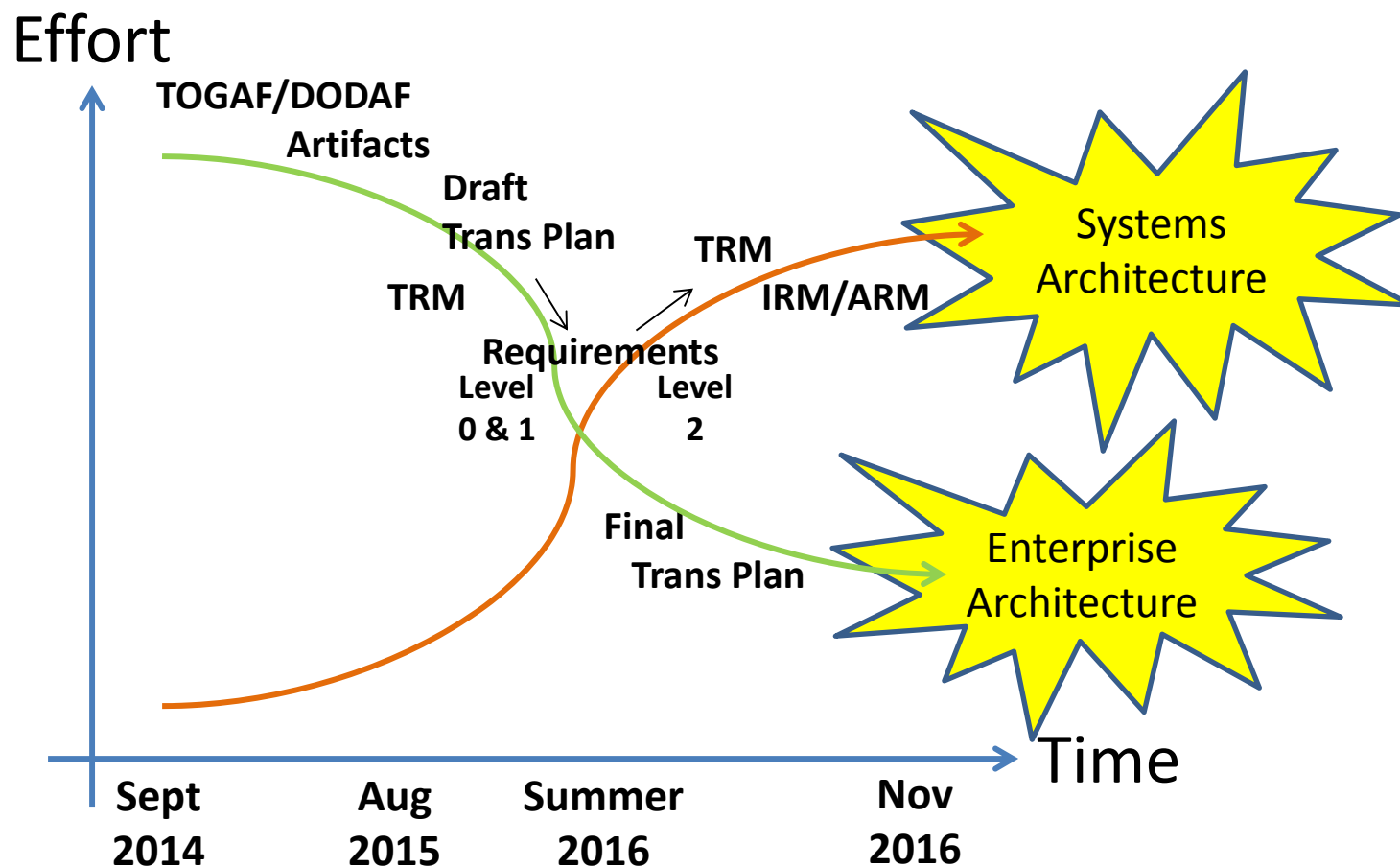


BACKUP INFORMATION



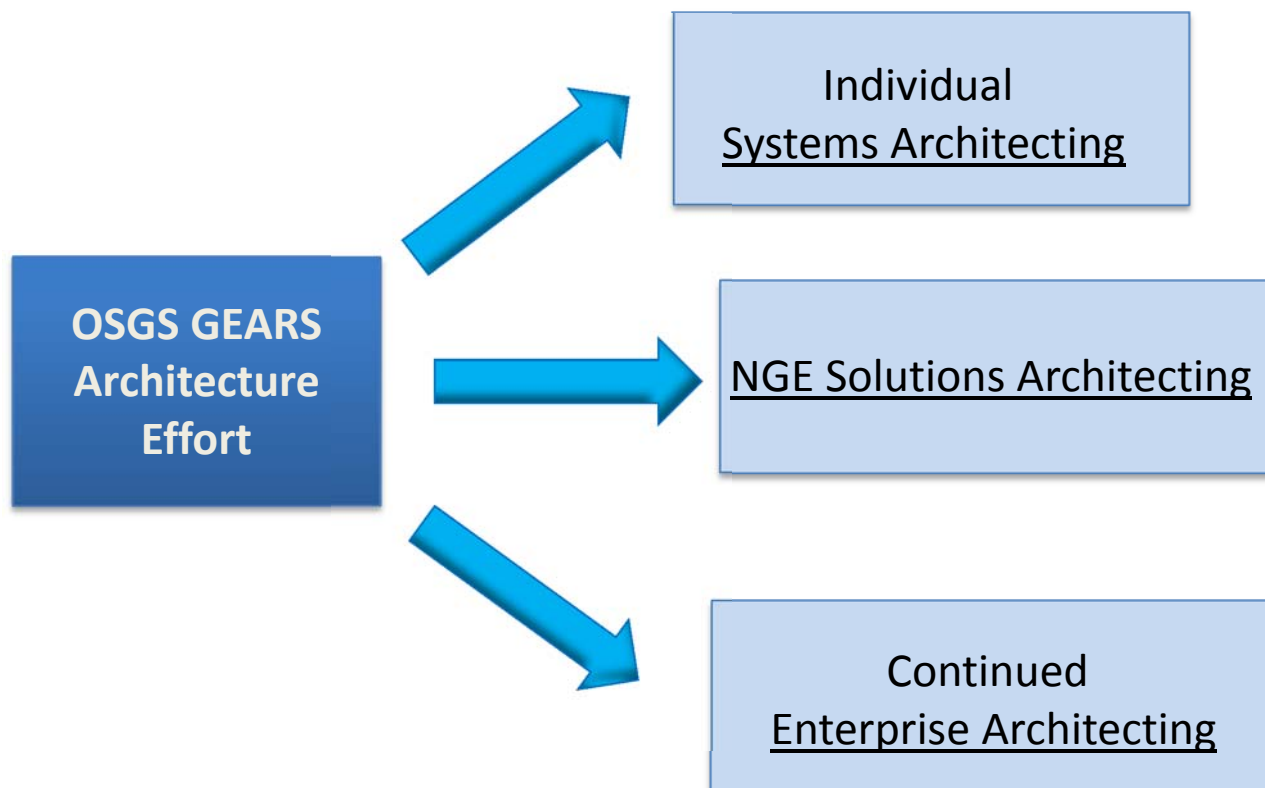
GEARS Architecture

Program Direction/Where We Are Headed





GEARS Architecture Way Ahead





GEARS Architecture

The Disciplines

