

Headquarters Air Combat Command

ACC Warfighter Support: Distributed Geodatabase Replication



This Briefing is:
UNCLASSIFIED



Overview

- **Operational scope**
- **Key players**
- **Key milestones**
- **Challenges**
- **Integration processes & dataflow**
- **Wrap-up**





Operational Scope

- Western hemisphere & SW Asia
- 20 production Oracle/ArcSDE databases
 - ~800 vector layers
 - 5-10 million features
- Multi-tier Replica workflow
- Dozens of Replicas
- Daily edits, syncs
- Connected
- Disconnected
- Checkout – Check in
- 1-Way to FGDB





Key Players

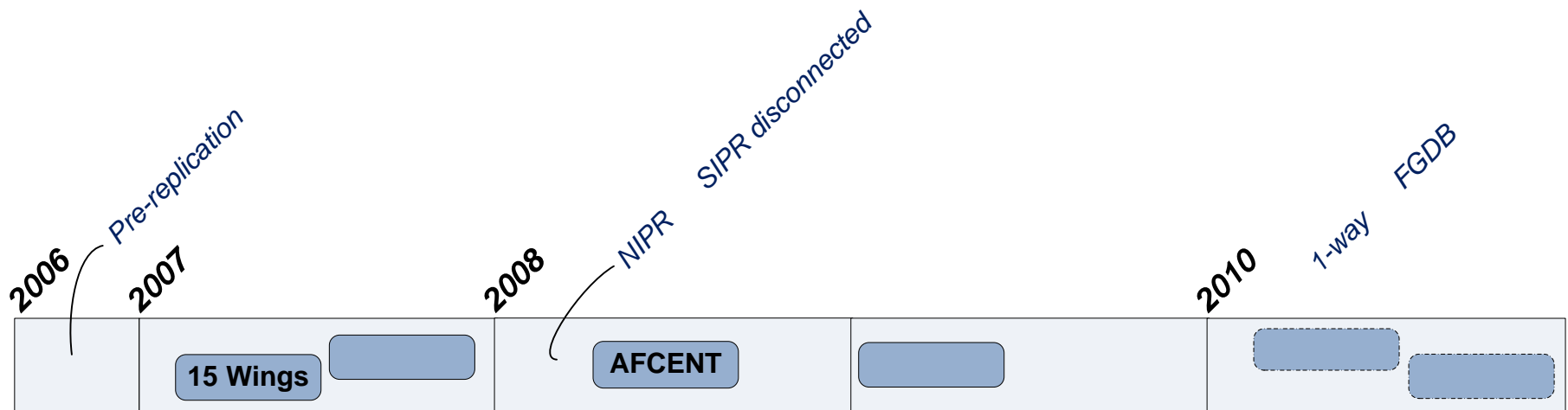
- **ACC (Langley AFB)**
 - **AFCENT (Shaw AFB)**
 - **Al Udeid (Qatar)**
 - **AFSOUTH (Davis Monthan AFB)**
- **OCONUS Sites**
 - **~1000 sites**
- **CONUS Bases**
 - **15 bases**





Key Milestones

- Replicated Data Migration – Integration Timeline
- Early 2007: CONUS bases
- 2007: AFSOUTH
- 2008: AFCENT
- 2009: Al Udeid
- **2010: ARCENT**
- **2010: Bagram**

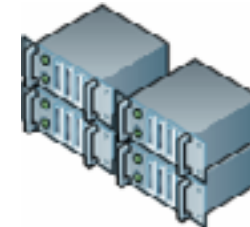




Challenges



- **Marshalling resources / communication**
- **System Administration (huge component)**
 - Several domains, players, and policies to navigate
 - 2 network operations centers (INOSC-E / AFCENT)
 - **Open critical communication lines**



- **Hardware / Software deployment, & configuration**



Challenges

- Supporting multiple requirements
- Data standardization
- Multiple projections / coordinate systems
- Integrate OCONUS data into aggregated Command DB
- Speed and streamline update process
- Centralize management of OCONUS assets



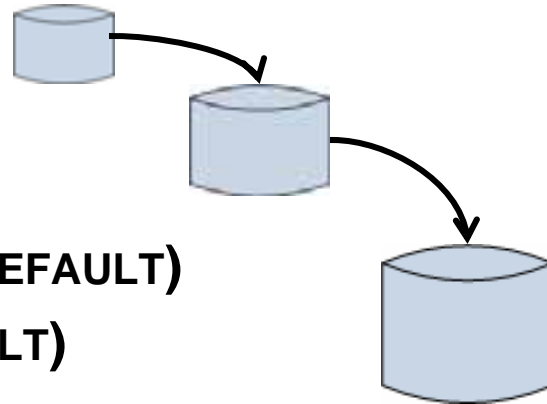


Migration / Integration Process

- **AFSOUTH (mid 2007)**
- **AFCENT (early 2008)**
- **AI Udeid (early 2009)**
 - **Identify special needs / mod as necessary**
 - **Scrub source data**
 - **Prep source for replica**
 - **Build replica version on destination**
 - **Register replica**
 - **Deletes on destination**
 - **Loads on source**
 - **Sync →**



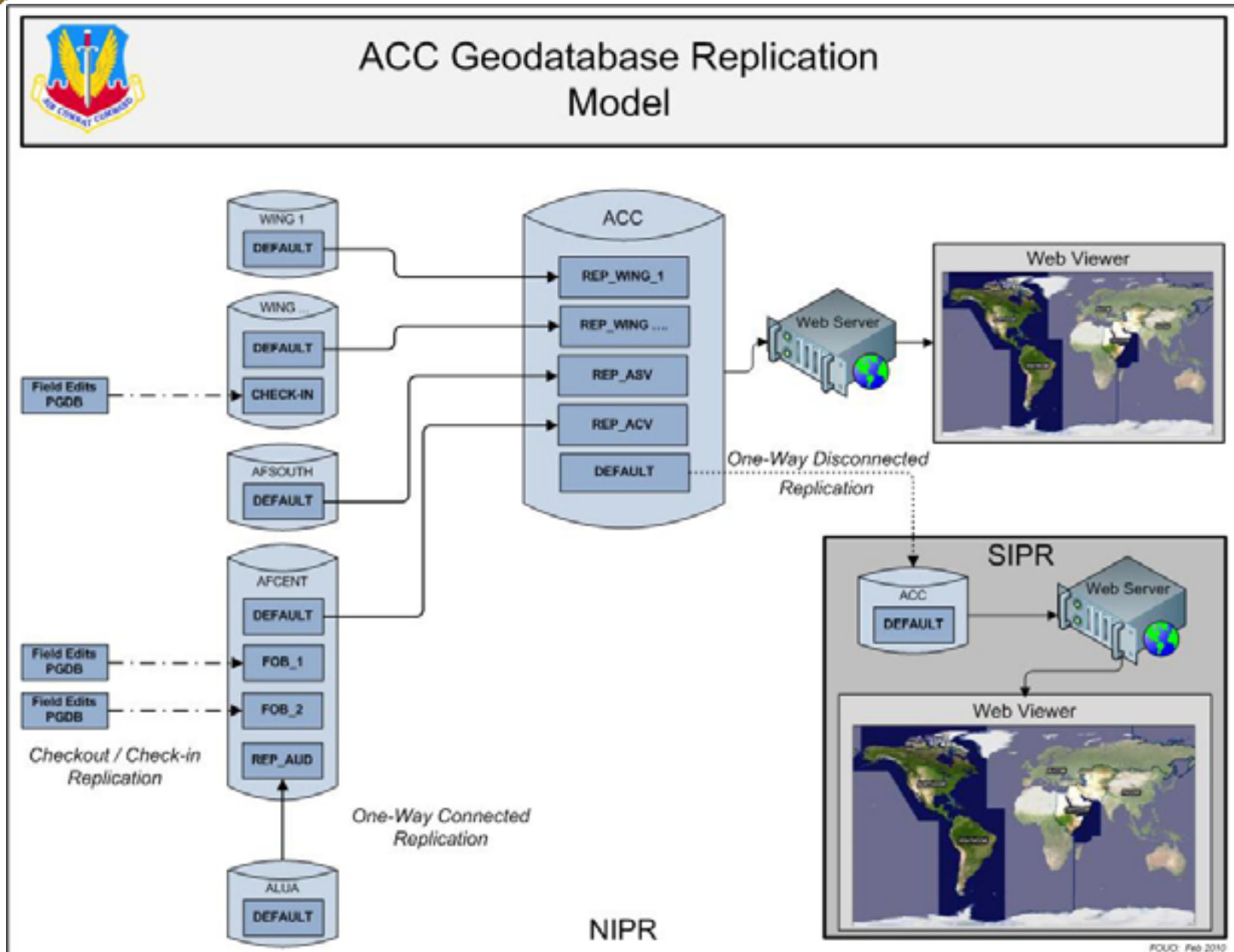
Data Flow Walkthrough



- **AI Udeid**
 - Data collection → versioned edits
 - Rec/post → sync to AFCENT (child of DEFAULT)
 - Rec/post → sync to ACC (child of DEFAULT)
 - Rec/post → DEFAULT
 - Hot layers: additional sync → FGDB
 - ready for global consumption
 - unclassified DB, web viewer, & data download site
 - Data change XML → disconnected sync to Classified DB
 - ready for global consumption (classified DB & web viewer)
- **AFCENT**
 - Same as above with the addition of Checkout – Check in field edits



Dataflow: Back End







Successes

- **Model supports expansion**
 - Bagram, Afghanistan
 - ARCENT
- **Managed growth & improvements in efficiency**
- **Breadth of tools employed**





Contributions

- **Special thanks to the following team members for their respective contributions to the contents of this presentation:**
 - **Christopher Schmuck (*ACC workflow & replication*)**
 - **Sean Kyzar (*ACC server administration*)**
 - **Sergio Henrici (*AI Udeid workflow & replication*)**
 - **Craig Erlandson (*AFSOUTH: workflow, replication, pm*)**
 - **Mark Watson (*AFCENT: workflow & replication*)**
 - **Peter Krawczak (*AFSOUTH: workflow, replication, pm*)**
 - **Dave Williams (*ACC pm*)**
 - **Charles Robbins (*AFCENT pm*)**



Questions & Comments

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Next up:

**‘Advanced Raster Management in
Support of the Warfighter’**