

# Financial Management & Comptroller Directorate

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## **SMC/ FMC Cost Topics** Southern California ICEAA

John Karns  
SMC/FMC  
Dec 2016



# Changes in AF Leadership

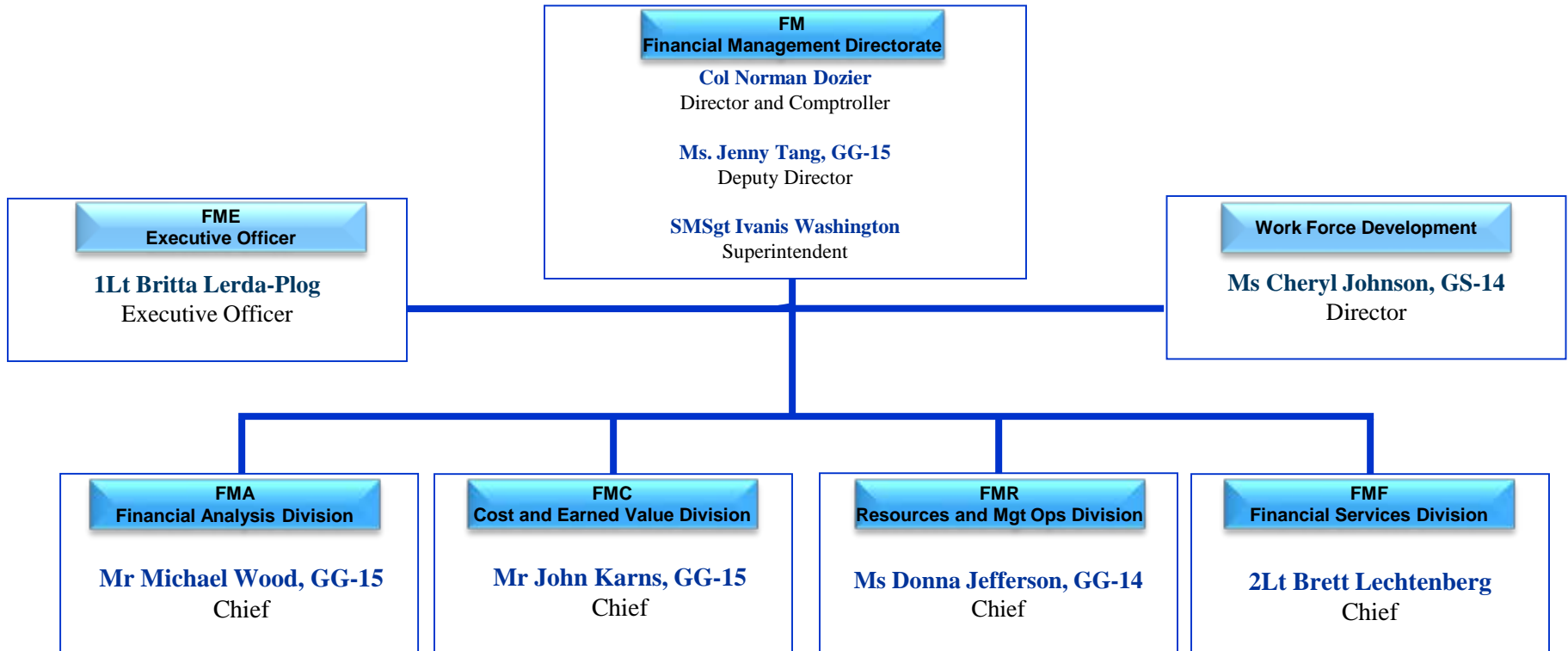
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- AFSPC/CC – **Gen John W. "Jay" Raymond** (Commander, Air Force Space Command, Peterson AFB, CO)
- SMC/CC – **Lt Gen Samuel A. Greaves / Lt Gen John F. Thompson** (Commander, Space and Missile Systems Center and Program Executive Officer for Space)
- SAF/FMC – **Ms. Pamela Schwenke** (Deputy Assistant Secretary for Cost and Economics)
- SMC/FM – **Col Norm Dozier** (Director of Financial Management and Comptroller, Space and Missile Systems Center)



# FM Staff Organization

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# SMC Cost Community Update

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- 73: Any guesses?
- SMC Government Cost Team Updates:
  - Work Force Development Director – Ms. Cheryl Johnson
    - Responsible for Career Development of Interns & Current Workforce
  - SMC Cost Chief Positions; 4 + 1
    - Additional GS-12 and GS-13 positions available/anticipated
  - SMC Intern Programs
    - Cost Revitalization occurred in FY10 timeframe; 2 Classes
    - New Intern Class FY16; 7 Interns
  - SMC Recruiting event held at the LAX Marriott
    - All SMC Functionals were in attendance; 2300 attended
    - Focus on Palace Acquires, Future Interns and Possible Journeymen Positions



# Collaboration w/in SMC

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*"Alone we can do so little; together we can do so much" – Helen Keller*

- Recent Collaborative efforts w/in SMC:
  - Cost Centralization- efficient/streamlined processes; removed redundancies; surge
  - Cost Murder Boards- joint review of products by Directorate & FM team
  - POM efforts- cost community involved from start; "Executability" cost weight factor
  - Cost Research Roadshow- Partnered w/ Directorates; id'd future CR focus areas
  - AD Site Visit- improved insight, stronger relations and potential data sharing ops
- Future Collaborative efforts:
  - SEV and EGS
  - SMC Cost Research Composition
  - Data Collection – SW, small SV, potential subcontractor insight, etc.
  - More Active Roles in DoD Forums / Events
    - ICEAA, PDI, and DoDCAS / SW IPT and similar cross organization IPTs



# Collaboration w/ Industry

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- Where have we seen an improvement due to Industry Collaboration?
  - Across the Board (Cost Centralization, MB, POM estimates)
    - Recent exchange of program data from Industry partners
      - New Government and Commercial programs in USCM
    - Insight into Digital Signal Processing and ASIC technologies
    - Improved methods of program cost Time-Phasing
    - Help on current studies (AI&T Flow Analysis)
    - Commercial versus Government business practice insight
    - Weather Satellite technical/cost considerations
    - Industry infrastructure improvements
- Future Collaborative efforts
  - SEV and EGS
  - Data Collection – SW, small SV, etc
  - Potential for Joint Presentations at Industry events
    - ICEAA, PDI, and DoDCAS / SW IPT and similar cross organization IPTs



# SMC CIPT and Industry Forums Collaborative Benefits

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- To Government
  - Building – strengthen working relationships (anti- “us and them”)
  - Better understanding of Contractor costing methodologies
  - Unearth opportunities for process improvements (e.g. proposal process)
  - Access to Industry experts regarding latest technological innovations
  - **Facilitate extra-program collection efforts/explanation-insight of Contractor data: cost, technical, parametric**
- To Contractors
  - Awareness and inputs to SMC, AF Space, Air Force, and DoD initiatives (e.g. BBP, Should-Cost, Should-Schedule)
  - Insight into Government estimating and evaluation methods
  - Forum for contractor innovations affecting their costs
  - Access to Leadership (keynote speakers, etc.)
  - Informal avenue to ask questions about Government requests

*FMC full support of collaborative forums that share information, coordinate methodologies and estimating approaches often specific to upcoming estimates*



"Individual commitment to a group effort - that is what makes a team work, a company work, a society work, a civilization work. "

-Vince Lombardi



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## **SMC/ FMCR Cost Research Topics**

Southern California ICEAA

Bruce Thompson  
SMC/FMCR

Dec 2016



# SMC Cost - Areas of Focus

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## Commodities

- Space
- Software
- O&S
- Ground
- Launch

## Communities

- CIPTs
  - SMC, NRO, NASA, S/W, O&S, Launch
- **JSCC**
- Air Force
- OSD

## Analysis

- Business Case Analysis
- Economic Analysis
- Economic Impact Analysis
- Schedule Risk Analysis

## Studies

- ECOs
- OGCs
- Phasing
- I&T

## Standards/Policy

- **CADE**
- SRDR
- MIL-STD 881D



# FY17 SMC Research Priorities

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- Unmanned Space Vehicle Cost Model (USCM)
- Launch Vehicle Cost Model (LVCM)
- O&S – Operations & Support
- Ground Segment
- Software
- Cybersecurity
- Phasing
- OSD CAPE CADE
- Small Satellite Data Collection
- MIL-STD 881D (SEIT/PM)
- ECO – Engineering Change Orders (or Contract Mods)
- EIA – Economic Impact Analysis
- Weight Growth



# 881D Update Background

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- Pending Update to Mil-STD-881 – ALL COMMODITIES!
  - Neil Albert March 2017 Deadline
- Two Space-related Appendices of most interest to SMC
  - Appendix F – Combined Space and Ground WBS
  - Appendix L – SEIT/PM and Support Equipment definitions
  - Appendix J – Launch Vehicle Systems WBS and Definitions
- JSCC proposes the following changes to Mil-STD-881
  - Updates to accommodate the change to the way that Ground Segments are currently being developed (less Site oriented)
  - Lower level element definitions which standardize and help understanding of SEIT/PM content and cost impacts
  - Additional minor changes to standardize inter-Agency cost collection
  - DISCUSS - Develop a new 881 Ground Segment WBS Appendix (separate from Appendix F Space WBS) to reflect the Ground Segment as an interdependent entity that crosses space systems and constellations. This needs to be composed for management and cost collection purposes based on new Ground emphasis and structure.



# *Name That Appendix!*

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If I want to define a WBS for a Ground System what Appendix (WBS) in the 881 would I choose?:

- Appendix F – Space WBS
- How about Appendix B – Electronics WBS?
- No, Appendix K – Automated Information System
- Wait, UAVs have there own in Appendix H!
- And so do Unmanned Maritime systems in Appendix I L

*Would it make sense to design a multi-Commodity Ground WBS that satisfies most, if not all, types of Ground Systems?*



# Appendix-F Ground Overview

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Current 881C		New 881D
Ground Segment SEIT/PM	↘	Ground Segment
GOPC		Ground Segment SEIT/PM
Function 1...f	→	Function 1...f
Ground Terminal	→	Ground Terminal
External Network T-Comm	→	External Network T-Comm
User Equipment	→	User Equipment
Facility	→	Facility
Vehicle/Shelters	→	Vehicle/Shelters

*Despite indenting Ground pieces 1 level, Lowest level of 881D will still be 5*



# Appendix-L SEIT/PM breakouts

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WBS #	Level 1	Level 2	Level 3	Level 4	Level 5
1.0	Space System				
1.1		SEIT/PM and Support Equipment 1..s (Specify)			
1.1.1			Systems Engineering		
1.1.1.1				SE - Management & Control	
1.1.1.2				SE - Requirements Analysis	
1.1.1.3				SE - Logical (Functional) Analysis	
1.1.1.4				SE - Physical Design Solution	
1.1.1.5				SE - Design Verification & Validation	
1.1.1.6				SE - System Performance/Analysis	
1.1.1.7				SE - Specialty Engineering	
1.1.1.8				SE - Mission Analysis	
1.1.2			Assembly, Integration and Test		
1.1.2.1				AI&T - Management & Support	
1.1.2.2				AI&T - Test Engineering	
1.1.2.3				AI&T - Assembly, Integration & Test Execution	
1.1.2.4				AI&T - Environmental/Special Testing 1..n (specify)	
1.1.3			Program Management		
1.1.3.1				PM - Management & Administration	
1.1.3.2				PM - Planning and Controls (Business Management)	
1.1.3.3				PM - Contracts, Subcontracts and Material	
1.1.3.4				PM - Configuration & Data Management	
1.1.3.5				PM - Proposal Preparation	
1.1.3.6				PM - Production and Product Assurance Management	
1.1.4			Support Equipment		



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- *Questions / Comments?*