Reducing the Size of the AOC with Parallel Air Tasking

David A. Brumbaugh

Science Applications International Corporation (SAIC)

Intelligence & Information Solutions Division

4501 Daly Drive, Suite 400

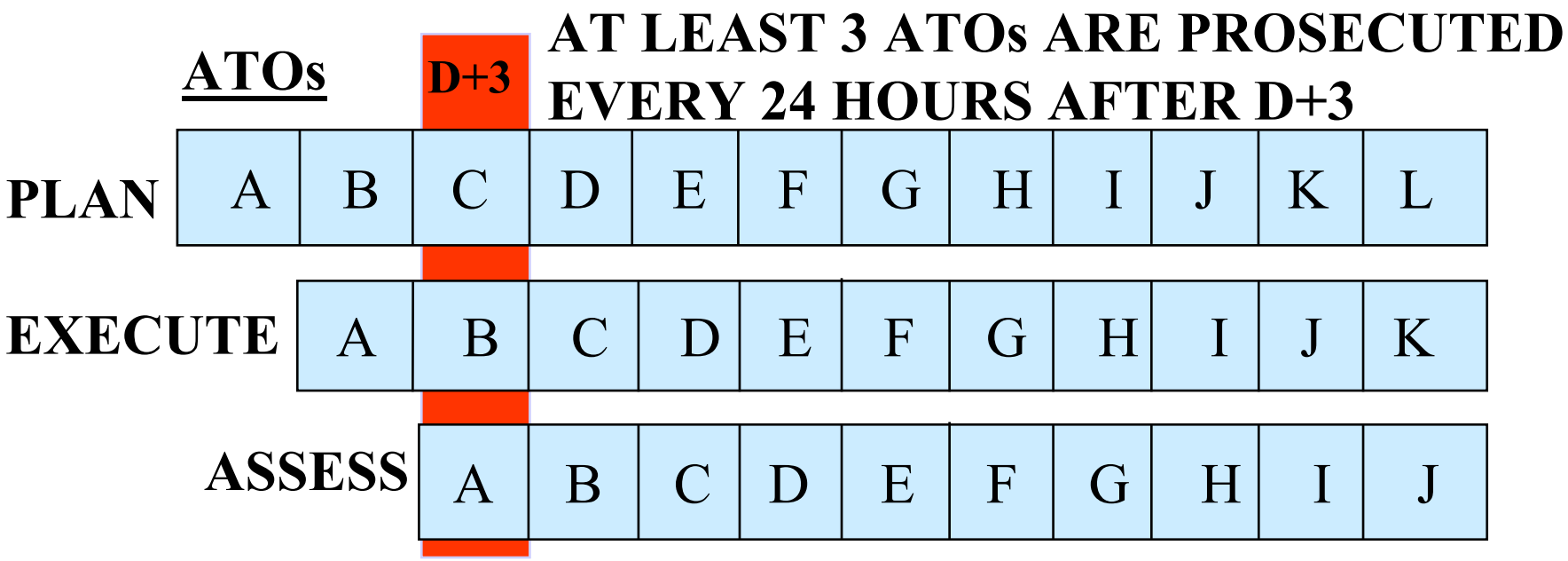
Chantilly VA 20151

28 May 2004

Introduction

- AOC structure based on scope of mission and people required to work around an outdated *system (H/W, S/W & process)*
  - *Process is the root cause* – hardware and software problems are the symptoms
  - *Integration* is a contributing factor
- Parallel Air Tasking
  - Reduces each ATO to the smallest unit size convenient for execution
  - Multiple ATOs executed simultaneously
  - Not artificially time constrained
  - Time based on desired effects
  - Makes it easier to implement effects-based operations (EBO) and decompose the structure of the AOC

Today's ATO Production and Management is a Serial Process



Weak Points in Current ATO Production

- A single message covering as many expected events as possible in a given block of time (usually 24 hours)
  - **Negative Impact** on Content – the ATO covers a lot of information because it covers a large block of ***time***
  - **Negative Impact** on AOC ***Size*** – too many contractors, liaisons and “experts” to produce each ATO
- Improvements are merely incremental because the serial production process hasn’t changed
  - Even with better tools the production cycle will only ***marginally*** improve
  - Making the individual steps in a ***serial process*** go slightly faster is less improvement than making them operate in parallel
  - It’s time to change the production process

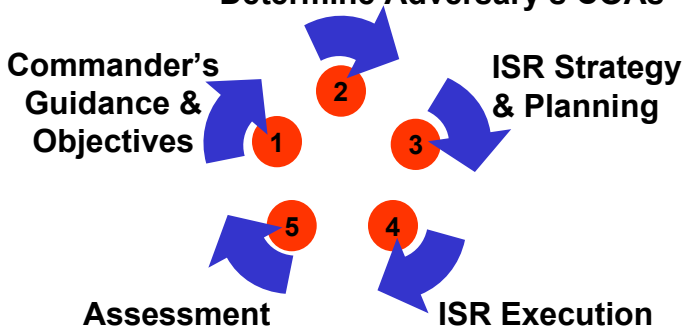
The Major Steps in the New Parallel Process

PBA

Defining Targets that Drive the Adversary to a Specific COA

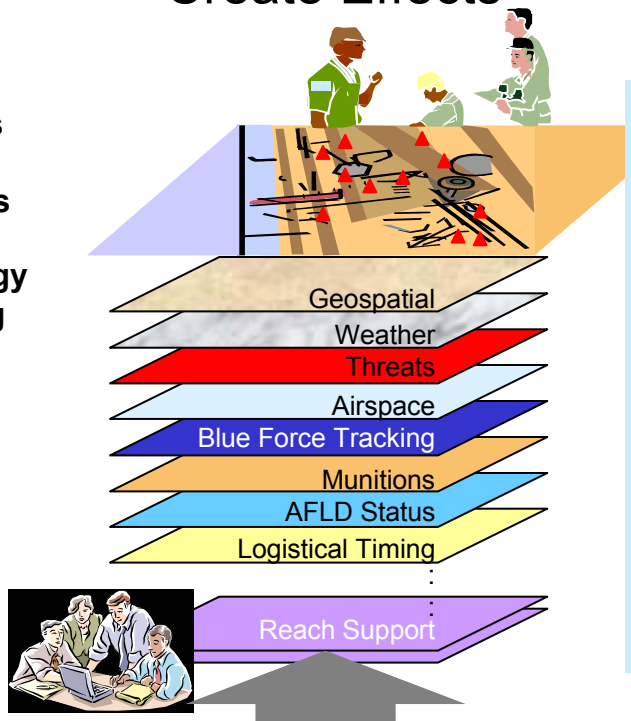
IPB

- **Define the Battlespace**
- **Describe Battlespace Effects**
- **Evaluate Adversary**
- **Determine Adversary's COAs**



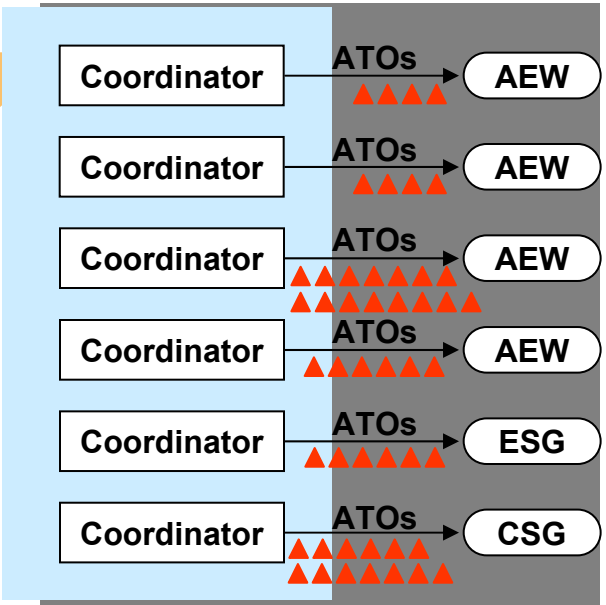
MAAP

Matching Targets to Capabilities to Create Effects



Queuing

Managing the Flow of Operations



BLUE FORCES STATUS REPORTING
Location and Operational Availability

Predictive Battlespace Awareness (PBA): Predictive ISR

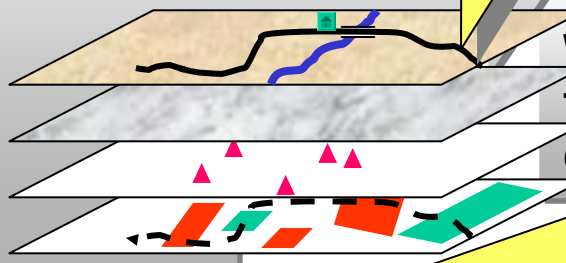
Intelligence Preparation of the Battlespace (IPB)

- Define the Battlespace
- Describe Battlespace Effects
- Evaluate Adversary
- Determine Adversary's COAs

Doctrine (behavior) *and* OB

Products of IPB are *Decision Aids*

Decision Aids



Geospatial
Weather
Targets
COA, NAI, TAI*

*COA – Course of Action
NAI – Named Area of Interest
TAI – Targeted Area of Interest

4 Elements of PBA
(1) IPB
(2) ISR Strategy & Planning
(3) ISR Execution
(4) Assessment

Time Sensitive Targets (TST)

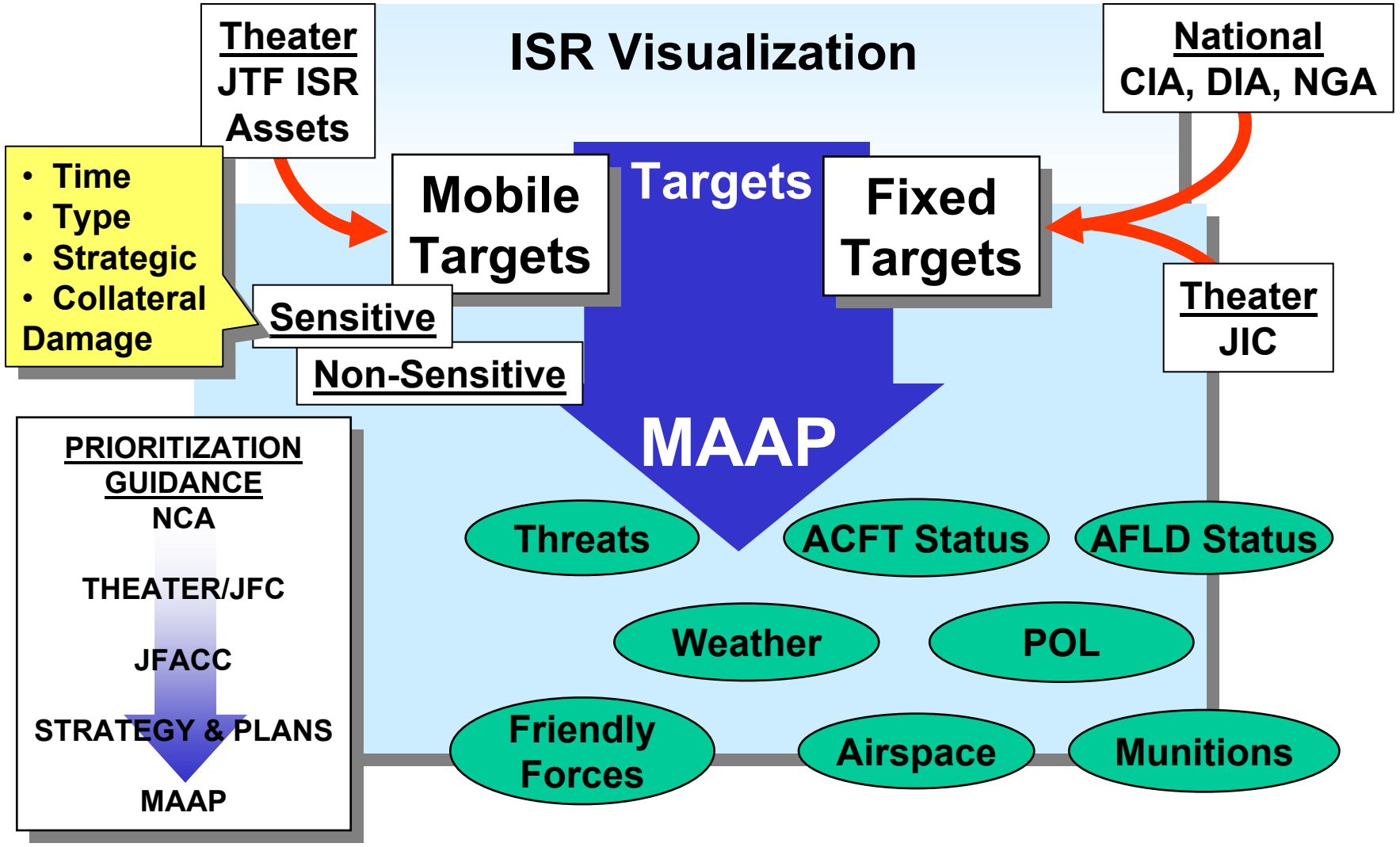
Joint Integrated Prioritized Target List (JIPTL)

ISR Collection Plan

Problems Remedied:
- ISR becomes postured to support EBO
- ISR anticipatory, not reactive
- ISR remains synchronous *and* asynchronous with operations

Drive the Adversary to the Commander's desired COA

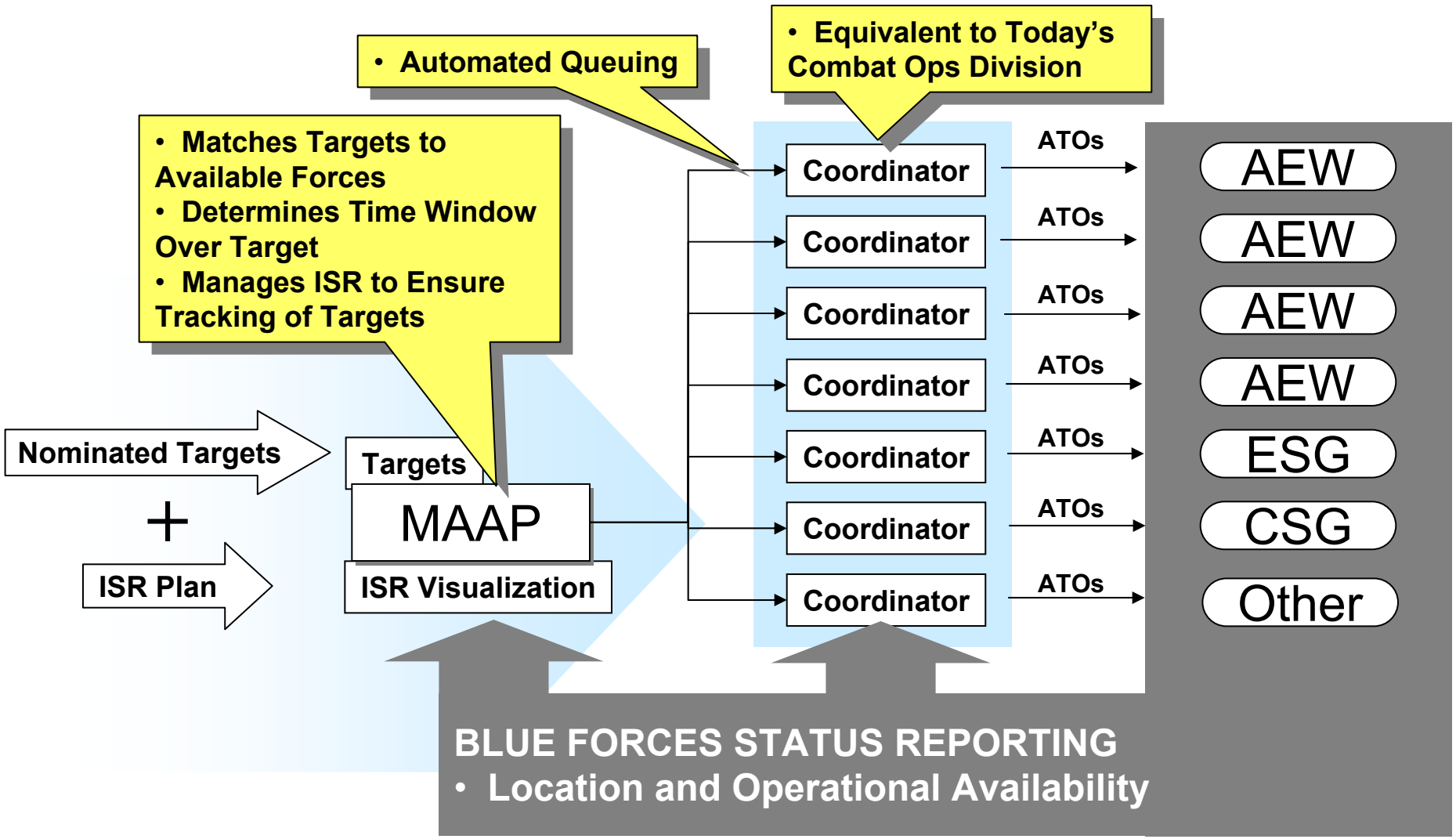
Master Air Attack Planning



Master Air Attack Plan

Per Joint Publication 3-30, *Command and Control for Joint Air Operations*, Figure III-14

The MAAP Feeds a Stream of ATOs to Force Capabilities

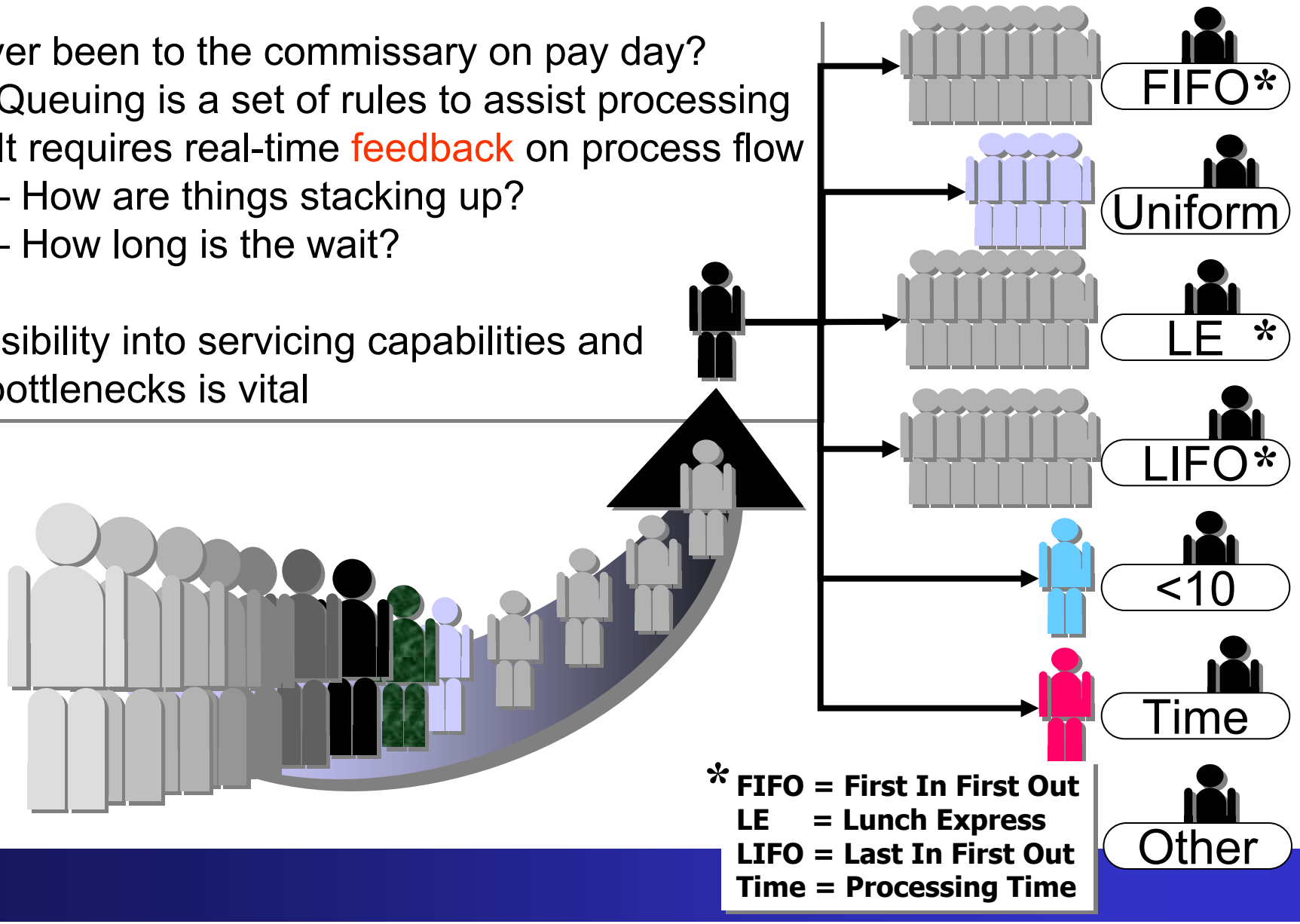


How Does Queuing Work?

Ever been to the commissary on pay day?

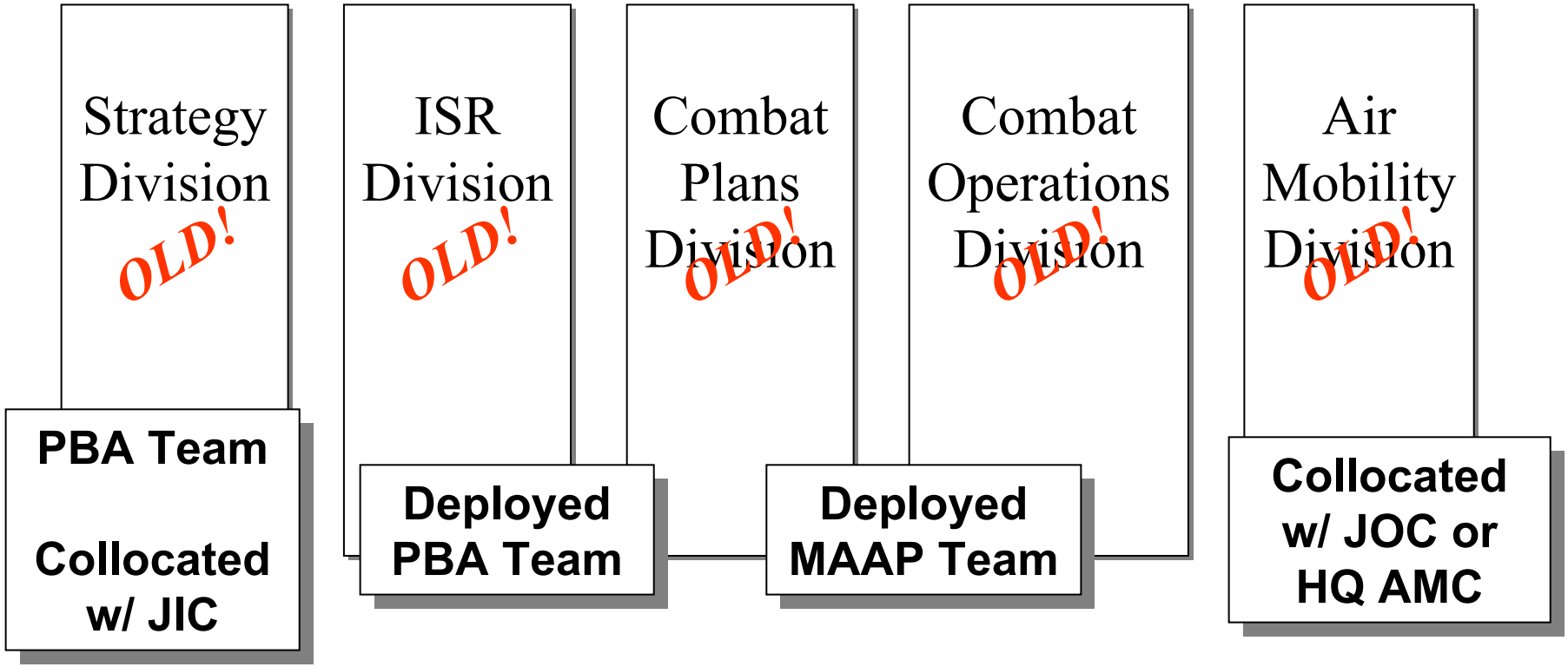
- Queuing is a set of rules to assist processing
- It requires real-time feedback on process flow
  - How are things stacking up?
  - How long is the wait?

Visibility into servicing capabilities and bottlenecks is vital



* FIFO = First In First Out
LE = Lunch Express
LIFO = Last In First Out
Time = Processing Time

Changes to the AOC Structure



The Deployed AOC is a Decision Node

Conclusion

- Establishing this construct facilitates oncoming improvements in weapons and C4ISR
  - Creates a modular production process, enhancing flexibility
  - Easier to “plug-and-play” new capabilities
- Reduce the time and labor to produce and manage the ATO
  - AOCs are “ATO factories”
  - Factories consolidate resources (footprint), i.e., people, comms, equipment, to mass produce products
  - We no longer have to operate our “factory” like Henry Ford—it’s time to optimize production
- Take the human out of the labor but keep the human in the decision cycle

How to Reach Us

David A. Brumbaugh
Science Applications International Corporation (SAIC)
4501 Daly Drive, Suite 400
Chantilly VA 20151

david.a.brumbaugh@SAIC.com

Office: (703) 814-7721