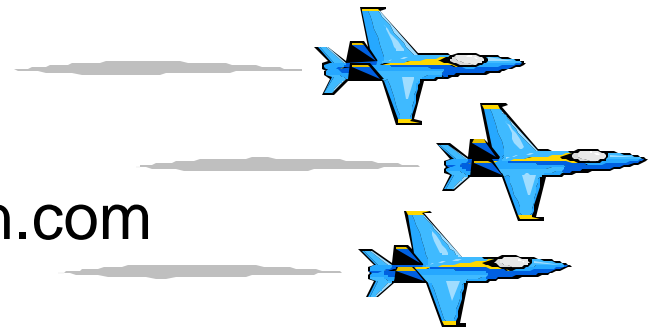


Using the OODA Loop (Observe, Orient, Decide, Act) for Measurement & Analysis or “Measure Like a Fighter Pilot”



Joe Lindley
Garland, TX
972-205-7281
Joe_H_Lindley@Raytheon.com



Purpose

- Introduce the OODA Loop as an Enabler for Implementing Measurement and Analysis (MA)
- Scope
 - Project Level Measurement
 - Measurement Analyst/Practitioner perspective
 - Implementation Strategy
 - Example Charts
 - Lessons Learned

Agenda

John Boyd's OODA Loop

Rationale for its Use in MA

The OODA Loop for MA

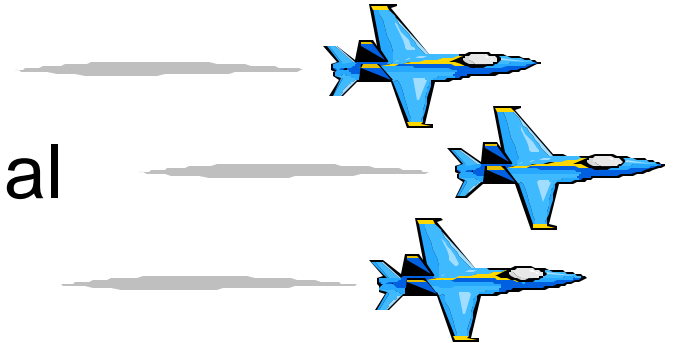
Summation

The Legacy of Colonel John Boyd (USAF Ret)

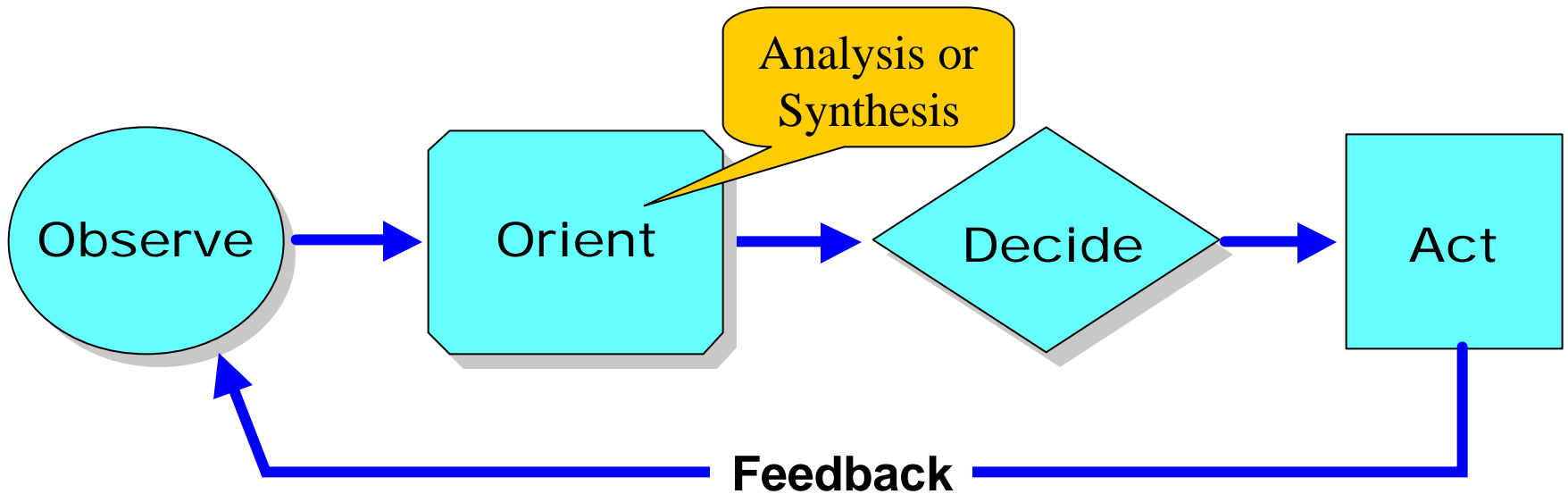
- References in Back-up Material
- Boyd's Nicknames:
 - “40-Second Boyd” (Korean War)
 - “Mad Major” (F-15, F-16)
 - “Genghis John”

The OODA Loop & Maneuver Warfare

- U.S. Marine Corps
- Both Gulf Wars



Boyd's OODA Loop



- Relates to all human behavior
- Goal: Successful interaction with other loops
- Get inside the opposing OODA Loop
 - Destructive: Air Combat, Warfare
 - Constructive: Engineering Process

Agenda

John Boyd's OODA Loop

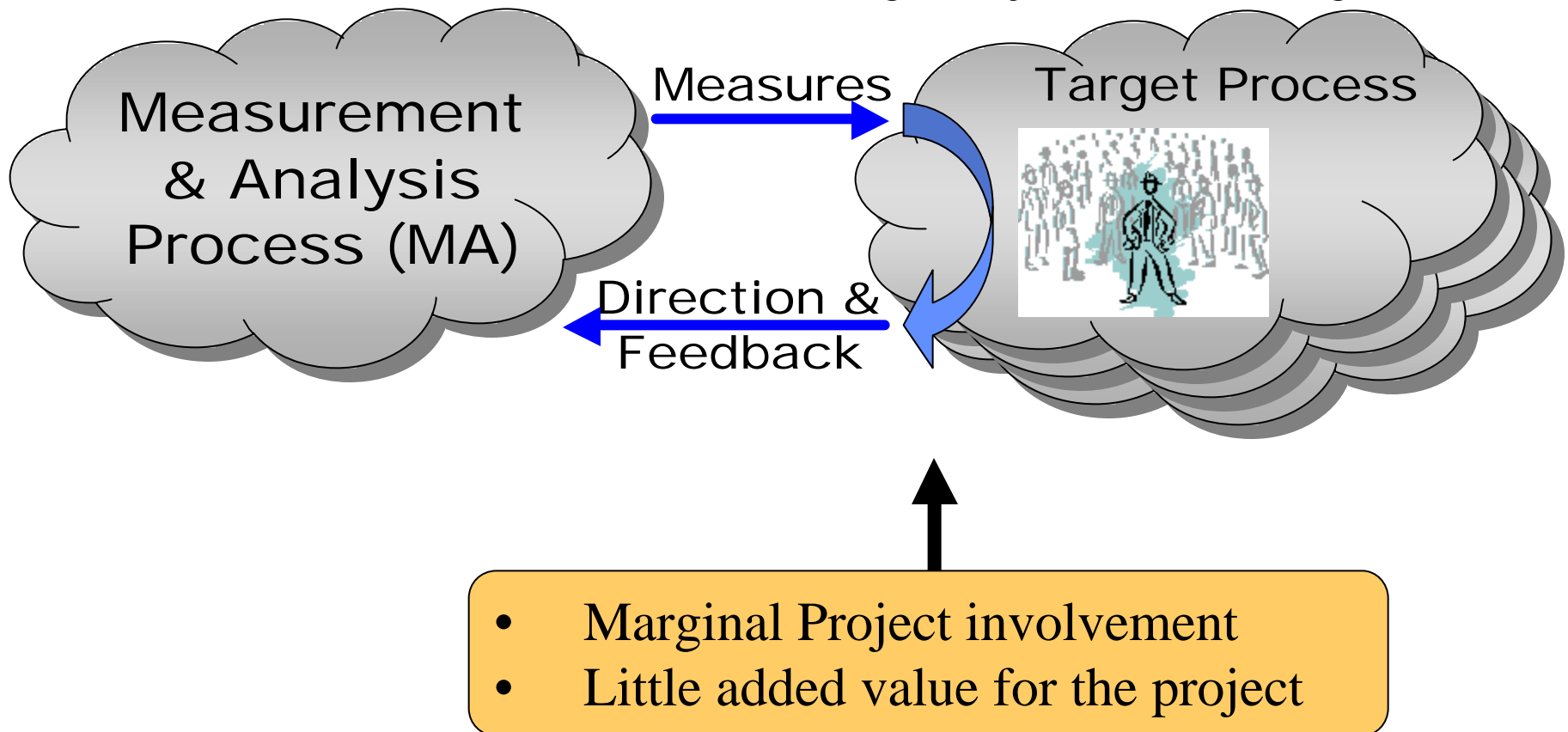
Rationale for its Use in MA

The OODA Loop for MA

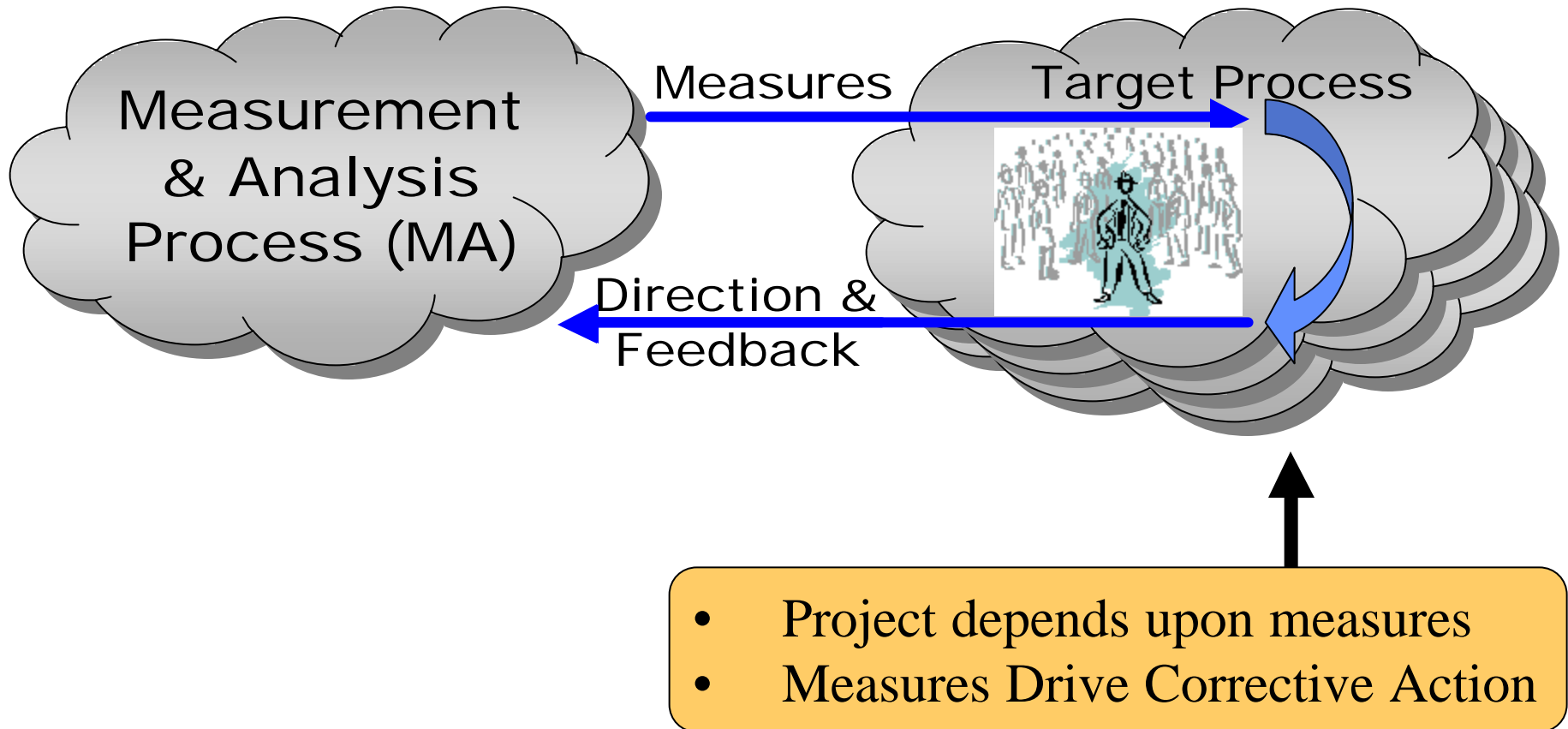
Summation

Shallow Measurement Loops Fail

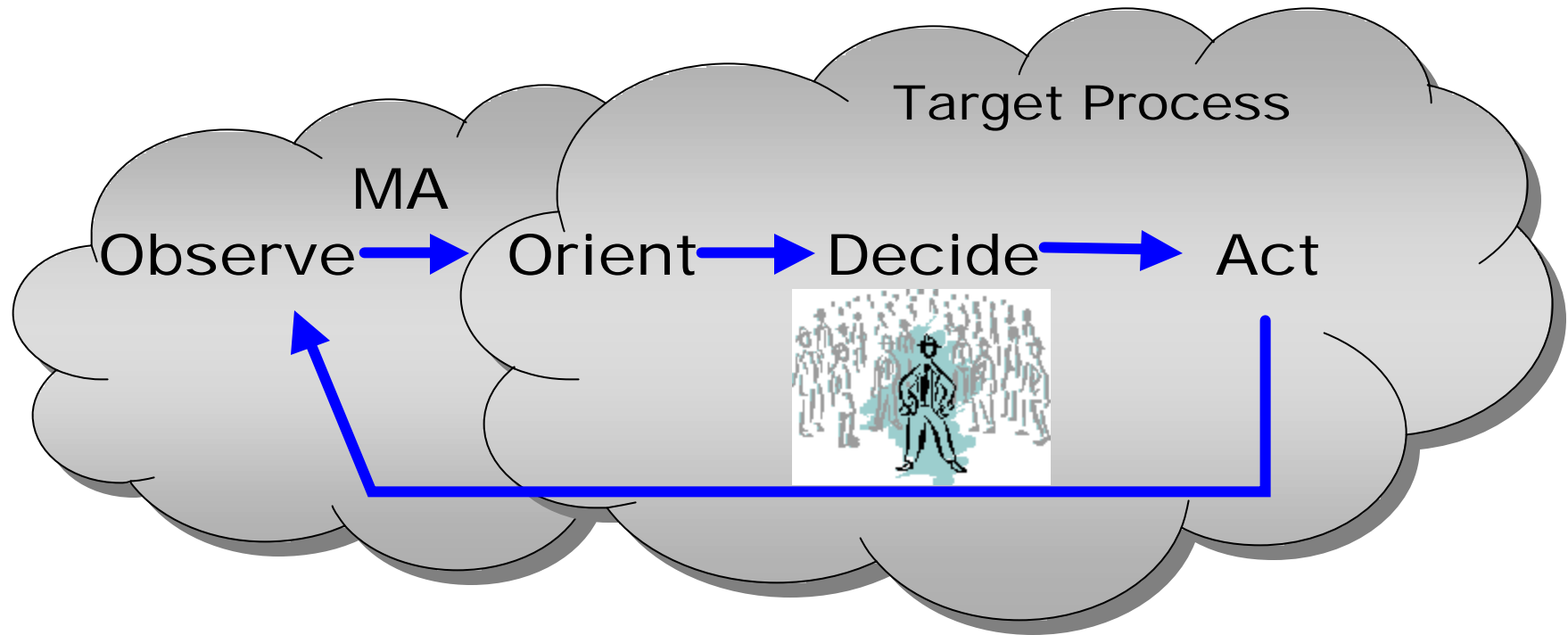
e.g. Project Monitoring & Control



Deep Measurement Loops “Engage” and Succeed



“Engage” by Getting Inside the Target Decision (OODA) Loop



- Shifts focus to Target Process
- Provides an agile Framework for Action
- Drives and Shapes Corrective Action

Agenda

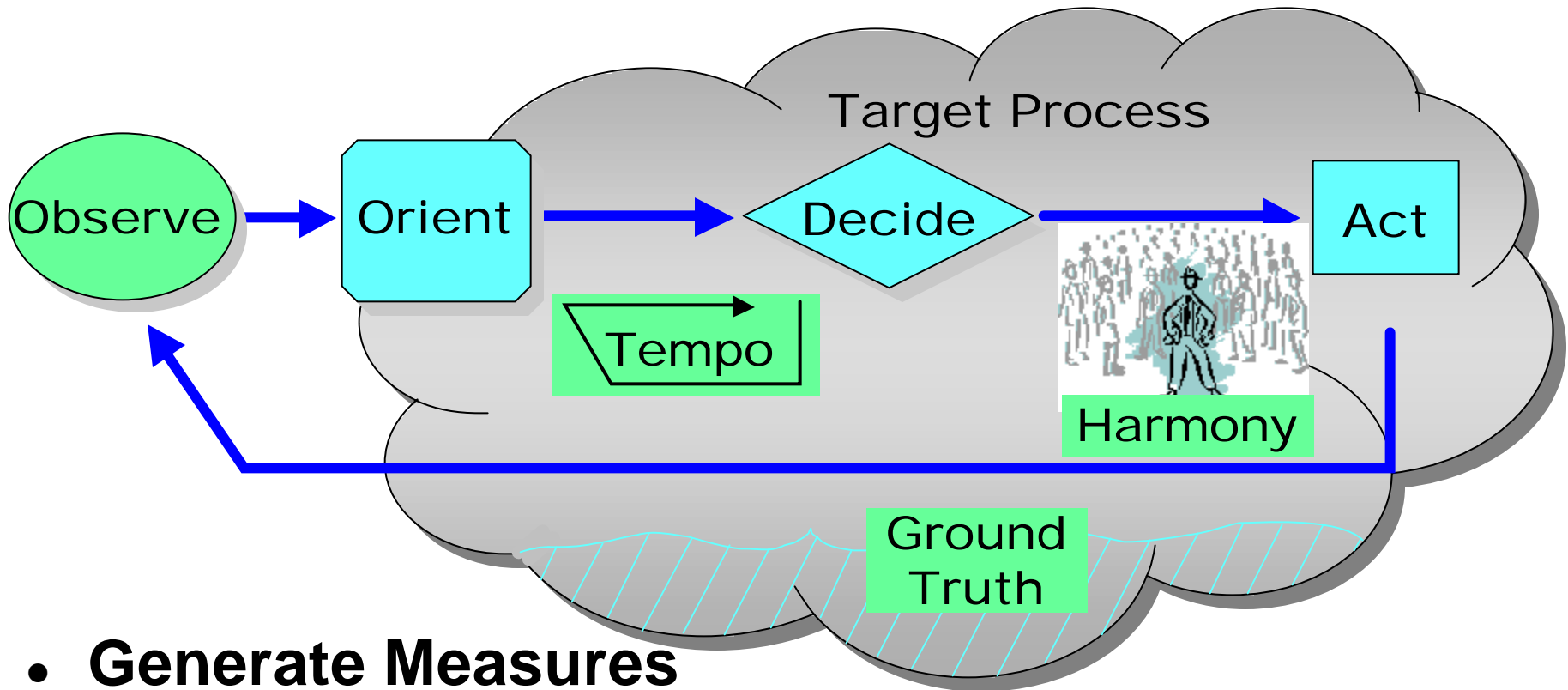
John Boyd's OODA Loop

Rationale for its Use in MA

The OODA Loop for MA

Summation

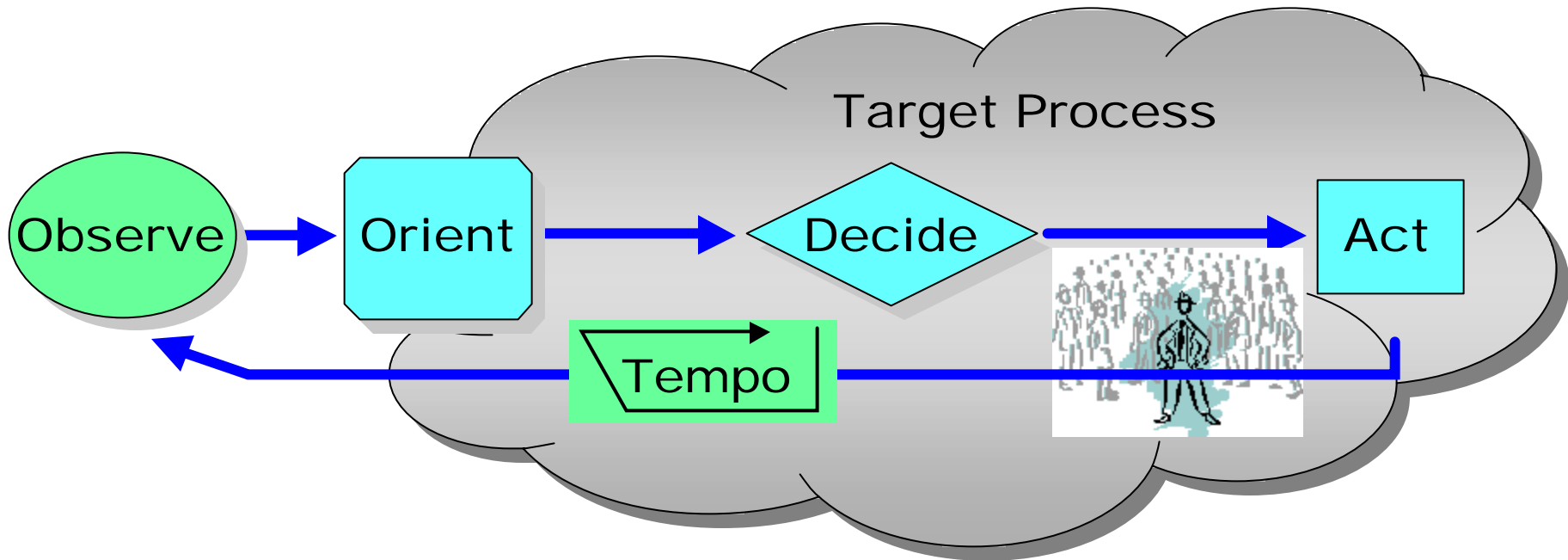
Observe



- **Generate Measures**

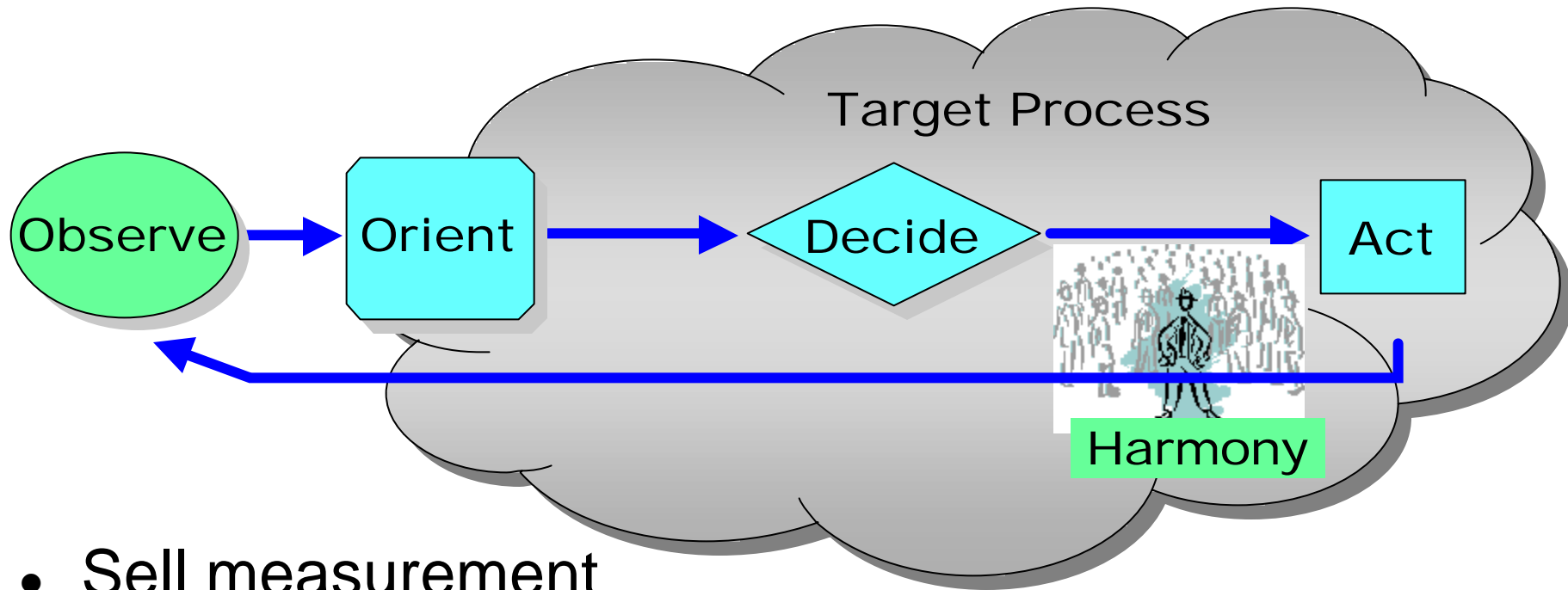
- Establish Tempo
- Create Harmony with the Staff
- Establish Ground Truth

Observe (Tempo)



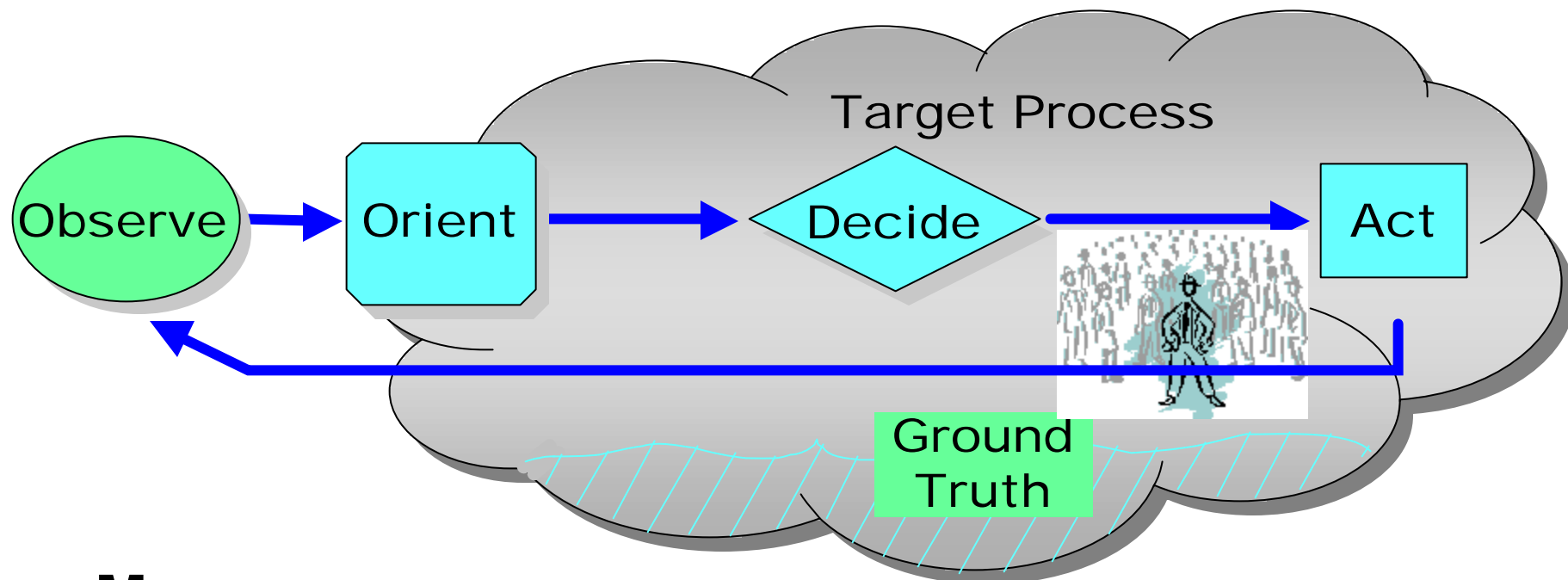
- Tempo: “Measurement Frequency & Timeliness”
- Very challenging
- Tools are critical

Observe (Harmony)



- Sell measurement
- Build trust
- Emphasize the common goal - Corrective Action
- Avoid friction

Observe (Ground Truth)



- **Measures:**

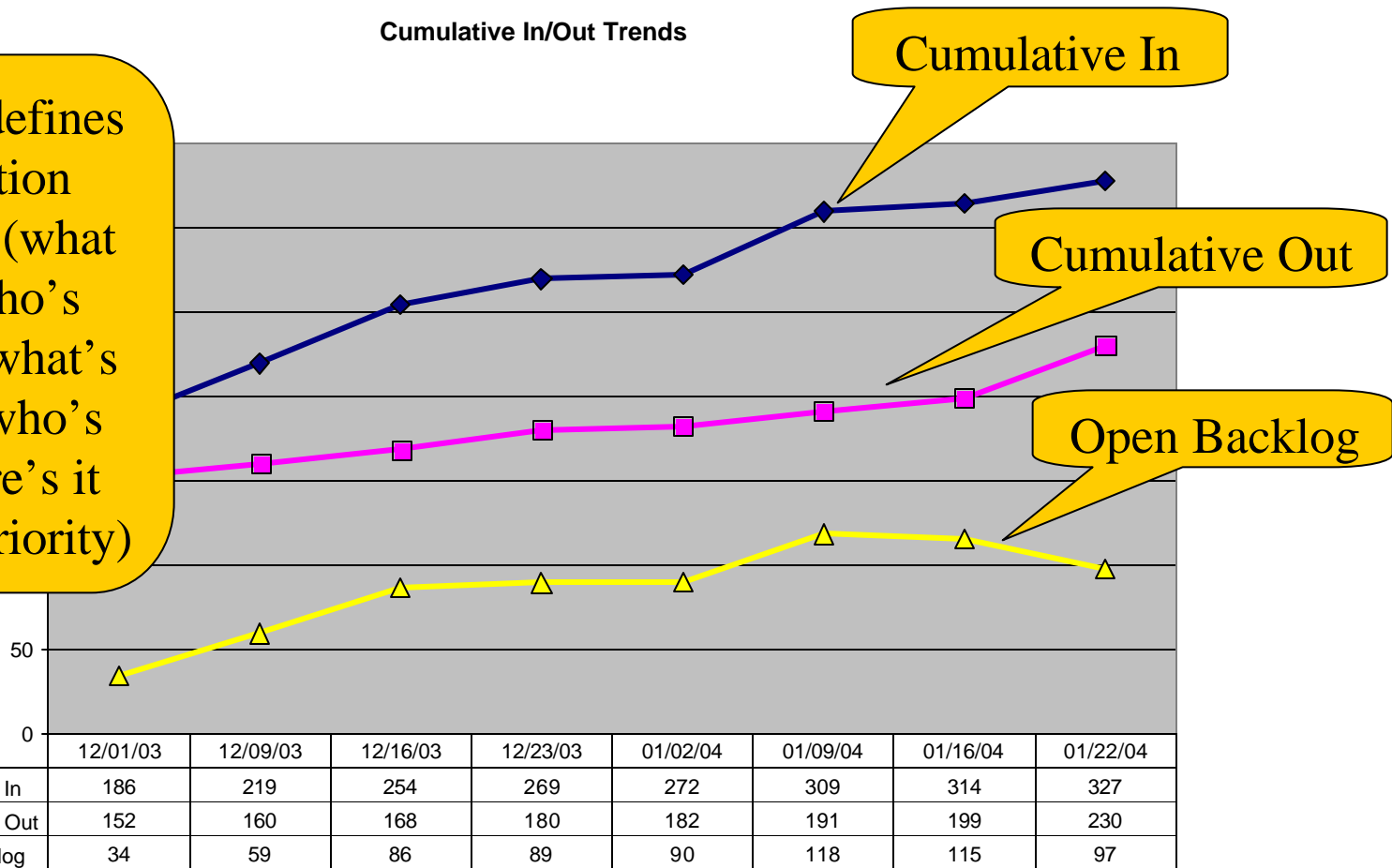
- Credible, Accessible, Flexible
- Fingertip Feel
- Primary Reference

Observe (Example Defect Chart)

Baseline | V2.0 | Responsible Org | (All) | Defect State | Fixing | Where Detected | DXMod | Build | (All) | Priority | (All)

Stakeholder defines the Integration Defect “bin” (what baseline, who’s responsible, what’s happening, who’s defect, where’s it going, what priority)

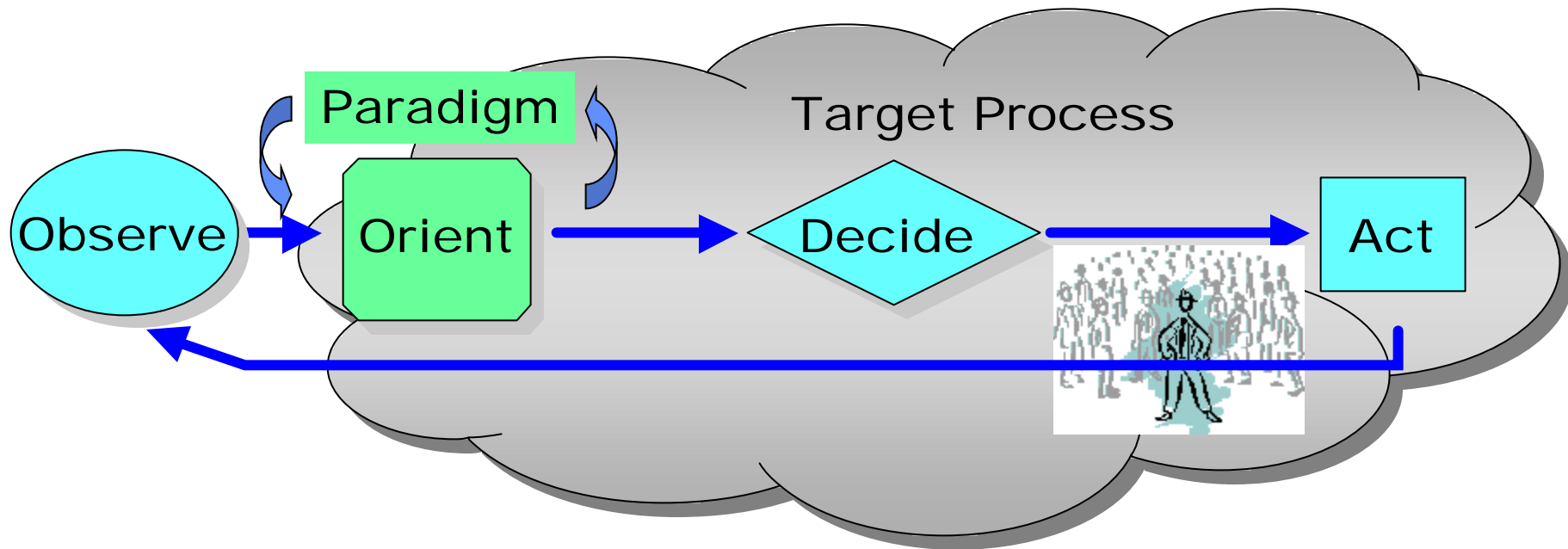
Cumulative In/Out Trends



Date

Credible, Accessible, Flexible, and Fingertip Feel

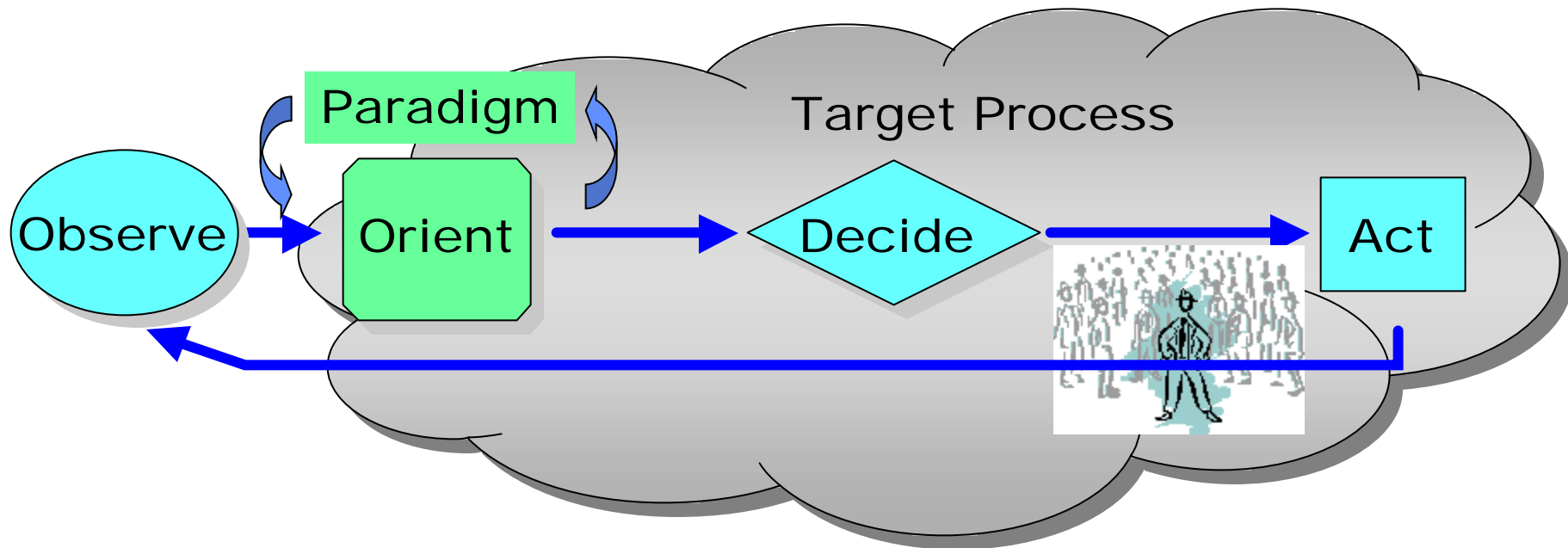
Orient



- **Orient to Measures and Environment**

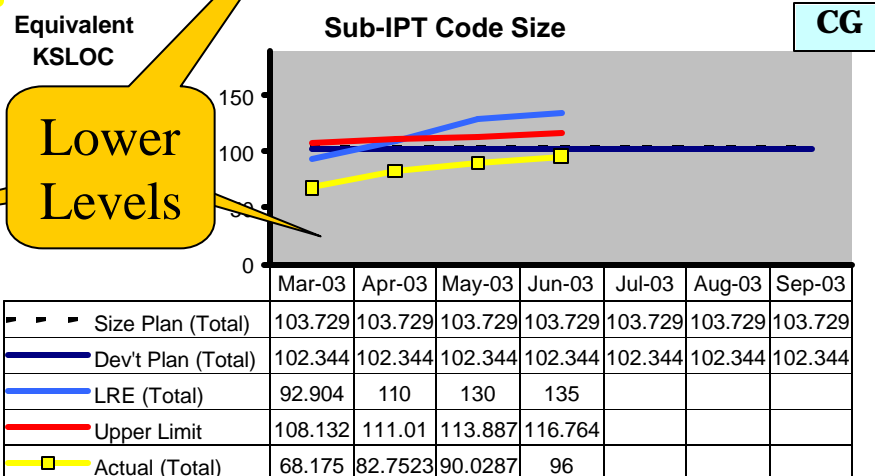
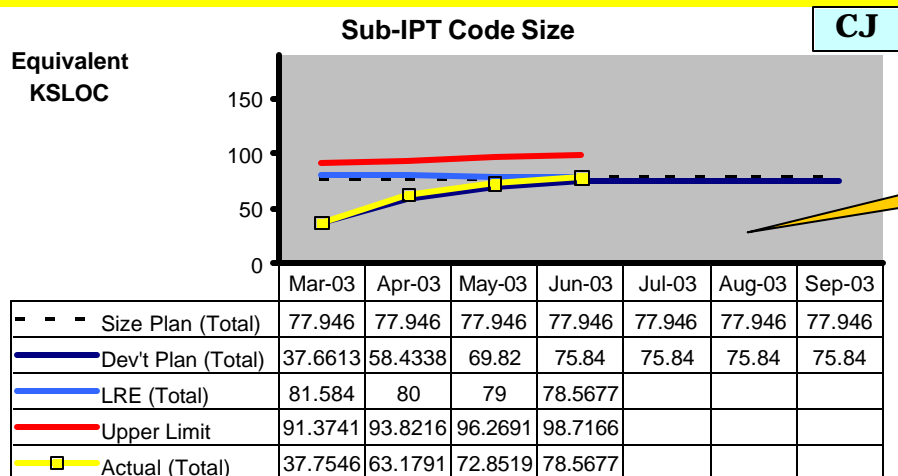
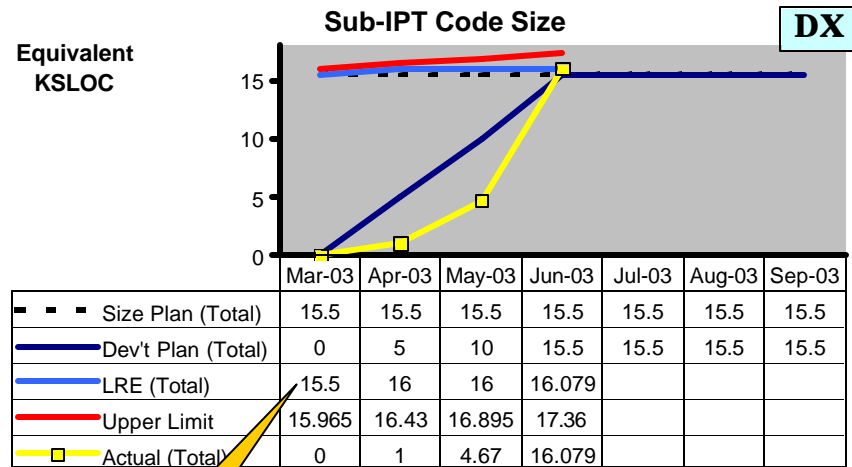
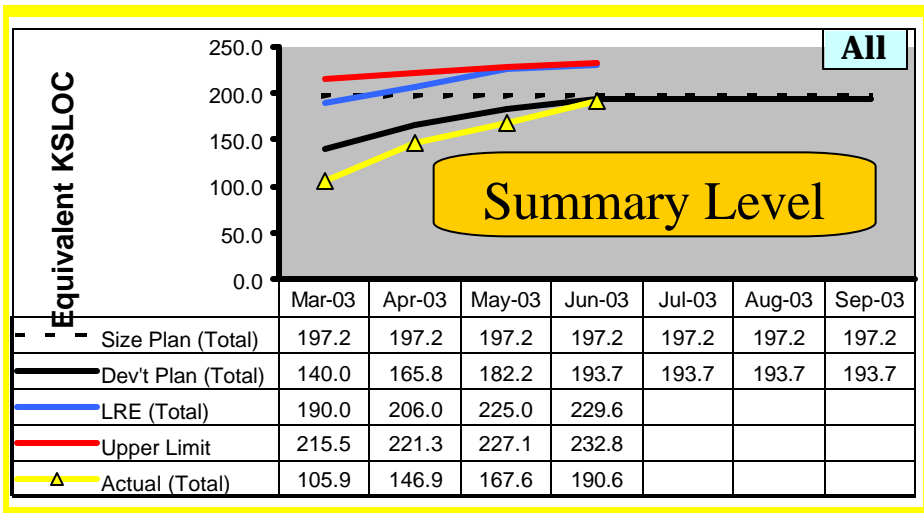
- Orient the Stakeholders
- Gain Leverage using Perspectives

Orient (Stakeholders)



- Understand the Stakeholder Paradigm:
 - May pull or push-back
 - May need adjustment
- Brief with Charts that support Decision-Making

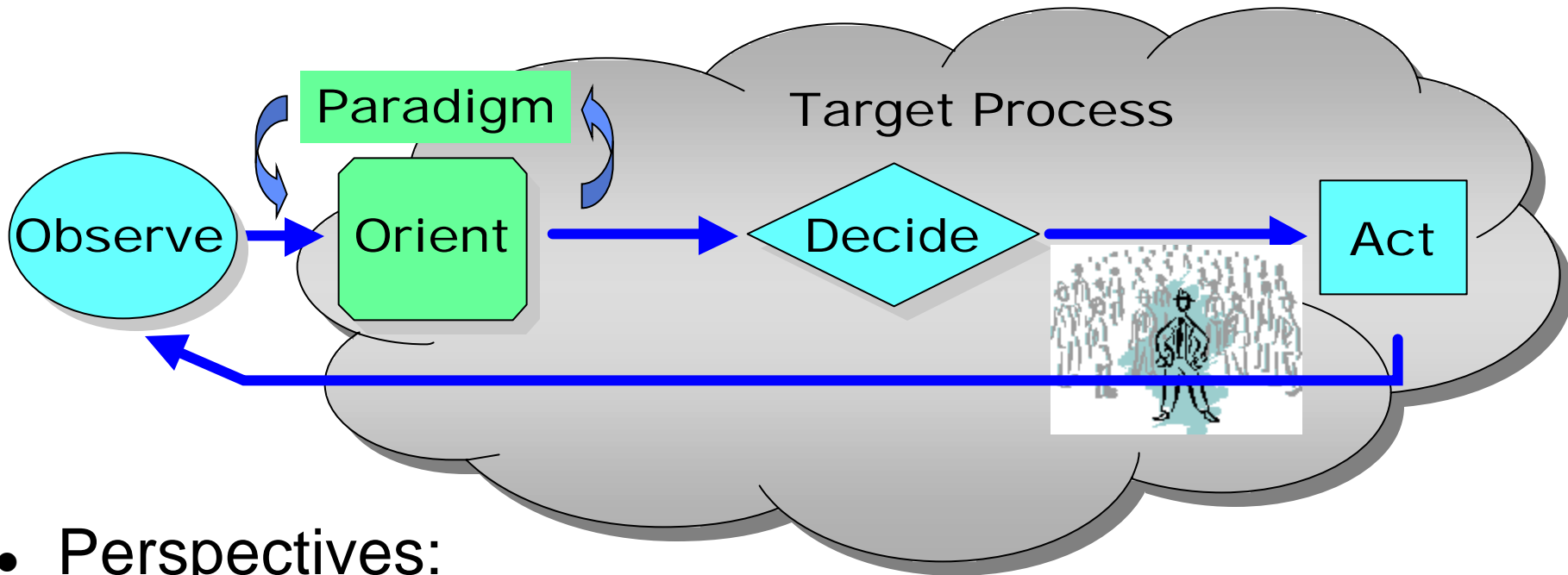
Orient (Example Code Size Charts)



Lower Levels

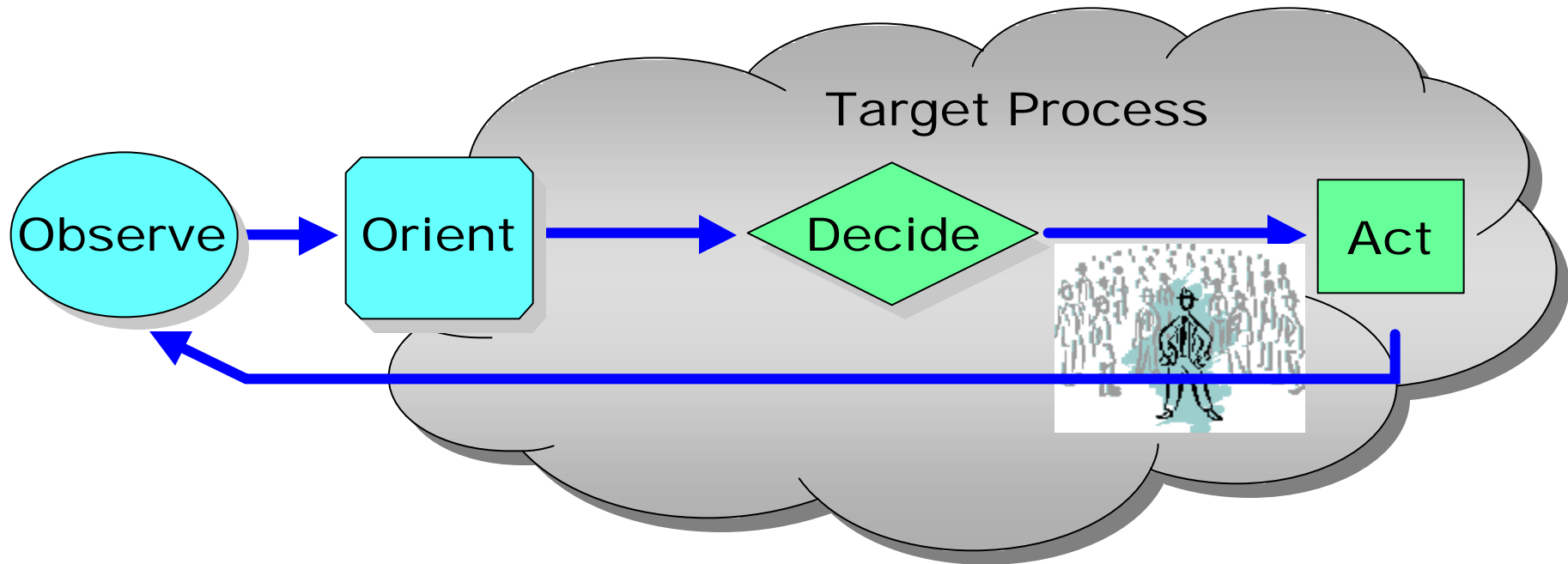
Complete, Consistent, Insightful, and No Frills

Orient (Leverage)



- Perspectives:
 - Cost
 - Competition
 - Limits/Forecasts
 - Responsibility
- Tools are critical

Decide & Act



- **Stakeholders Decide and Act**
 - Avoid delayed decisions
 - Proactively support decision/action

Agenda

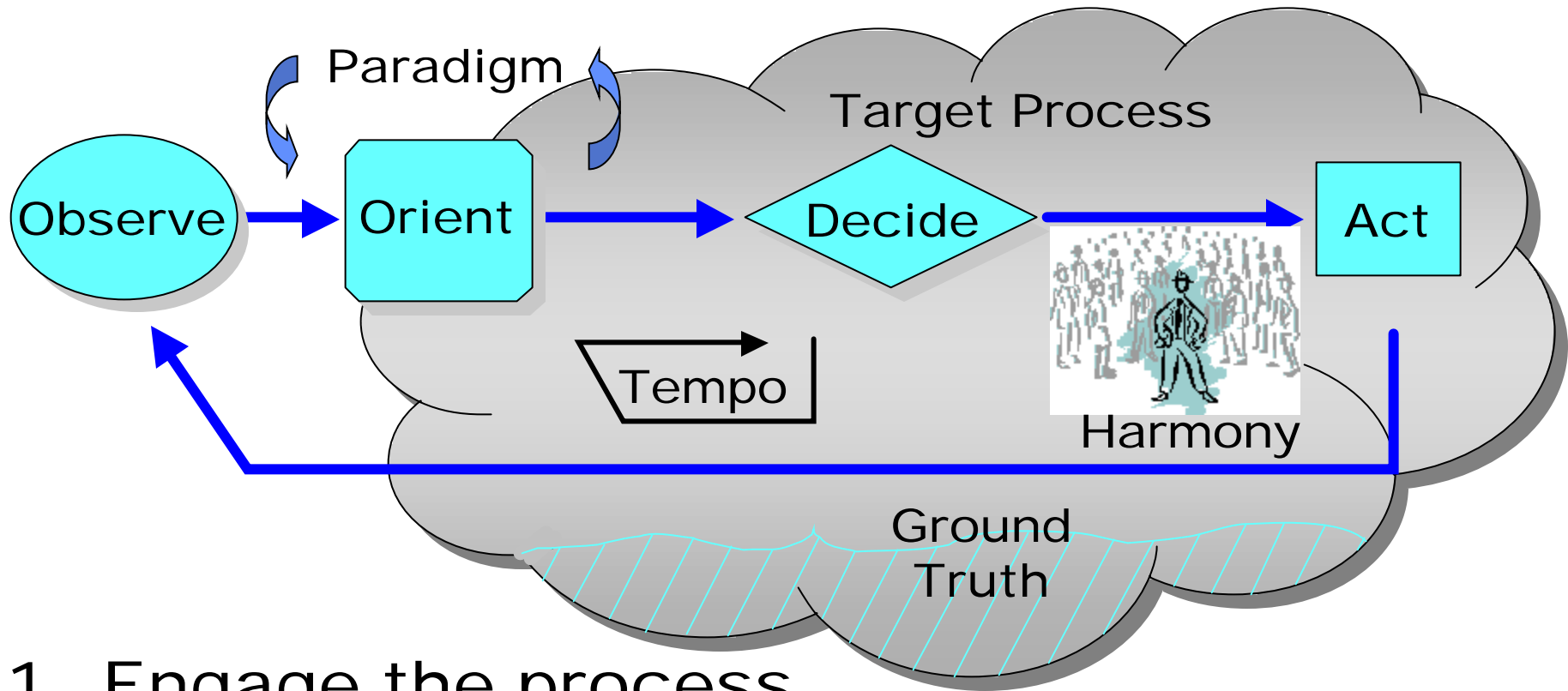
John Boyd's OODA Loop

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Summary

Measure Like a Fighter Pilot



1. Engage the process
2. Drive corrective action
3. Enjoy the ride!

Back-Up Material

References for John Boyd

Articles

“Genghis John”, Chuck Spinney, <http://www.d-n-i.net/fcs/comments/c199.htm#Reference2003,1998>, 1998 (suggested)

“John R. Boyd Colonel, United States Air Force”, <http://www.arlingtoncemetery.net/jrboyd.htm>, 2002

“War, Chaos, and Business”, http://www.belisarius.com/site_index.htm, 2003

“From Air Force Fighter Pilot to Marine Corps Warfighting: Colonel John Boyd, His Theories on War, and their Unexpected Legacy”, http://www.d-n-i.net/fcs/boyd_thesis.htm, 2000

Books

Boyd: The Fighter Pilot Who Changed the Art of War, Robert Coram, 2003 (Highly Recommended)

The Mind of War – John Boyd and American Security, Grant Hammond, 2001