Assessing Transition of Security Operations in Afghanistan

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Agenda

- Project Goal and Problem Statement
- Methodology
- System Design
- Metric/Value Structure
- System Explanation
- Conclusion
- Questions

Project Goal

Assist the Force Integration and Training Cell (CJ7) of the Combined Security Transition Command – Afghanistan (CSTC-A) by developing an assessment tool that measures progress, forward or backward, towards the 'best' situation of the Afghan Government being capable of securing itself.
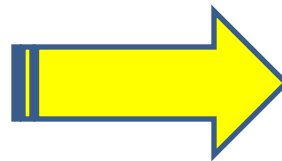
Problem Statement

- Develop a value model that assesses the transition of security lead from the Coalition to the Afghani Government

- CJ7 defined five Lines of Operation (LOOs) that support the goal of transferring security operations
  - Accelerate ANSF growth
  - Achieve security for the Afghan population
  - Marginalize malign actors
  - Achieve legitimate, responsive, and accountable governance
  - Facilitate community development

4

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Problem Statement
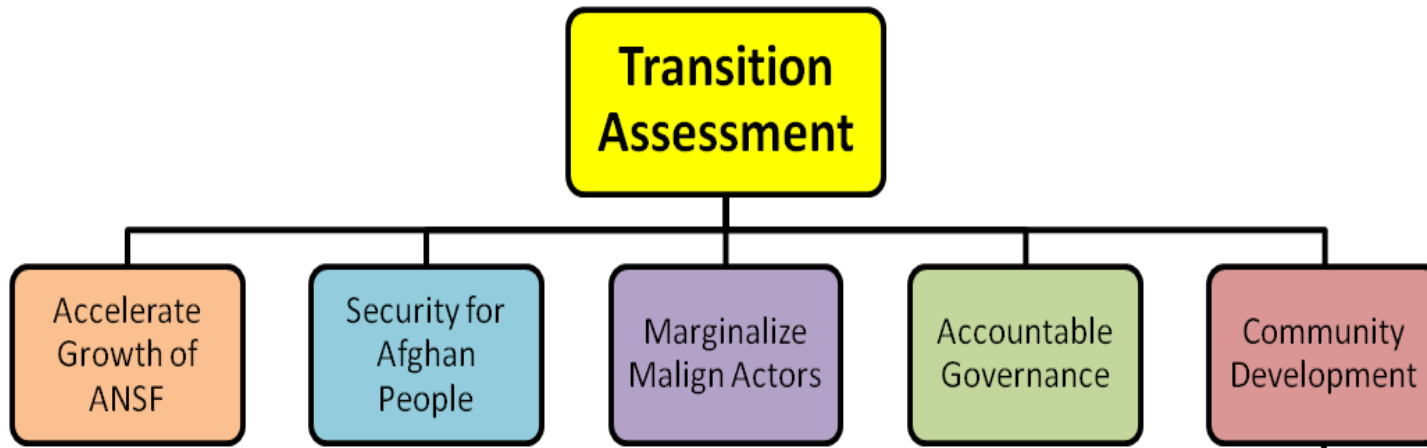
- Develop metrics and analysis tool to measure progress against the five LOOs
- Stakeholders
  - Force Integration and Training cell of NTM-A/CSTC-A (sponsor)
  - NTM-A/CSTC-A
  - Coalition military leadership
  - U.S. government leadership

Assumptions and Constraints

- CJ7 would receive requested reports monthly from the five regional commands (tasking authority comes from CJ3)

- Computers using the tool have Office 2007

- Users have a basic knowledge of Excel

- Information required for the input forms be easily accessible

- Selected metrics must be easily populated

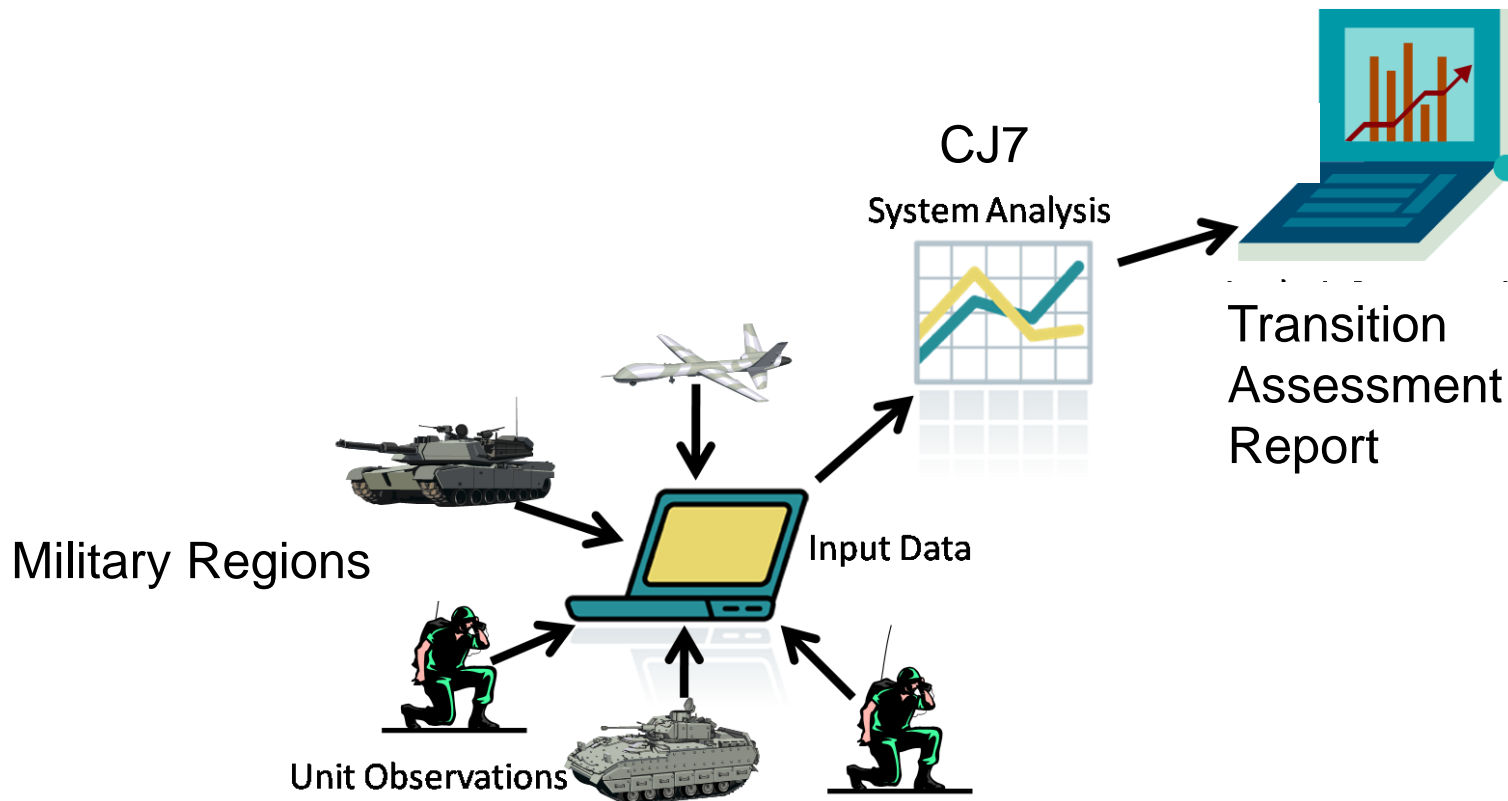- Must use software currently loaded on DoD systems

6

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Methodology

Project group organized into two subgroups

- System Design
  - Develop user interface, input form, storage, usable output
  - Integrate values, metrics, and value model from other team into the system

- Values and Metrics
  - Research values and metrics
    - "Requirements" to win a counter-insurgency conflict
    - Assessments of ANSF, security, Afghani government, and community
  - Develop value model
  - Develop input form for values weights and utility

Concept of Operation

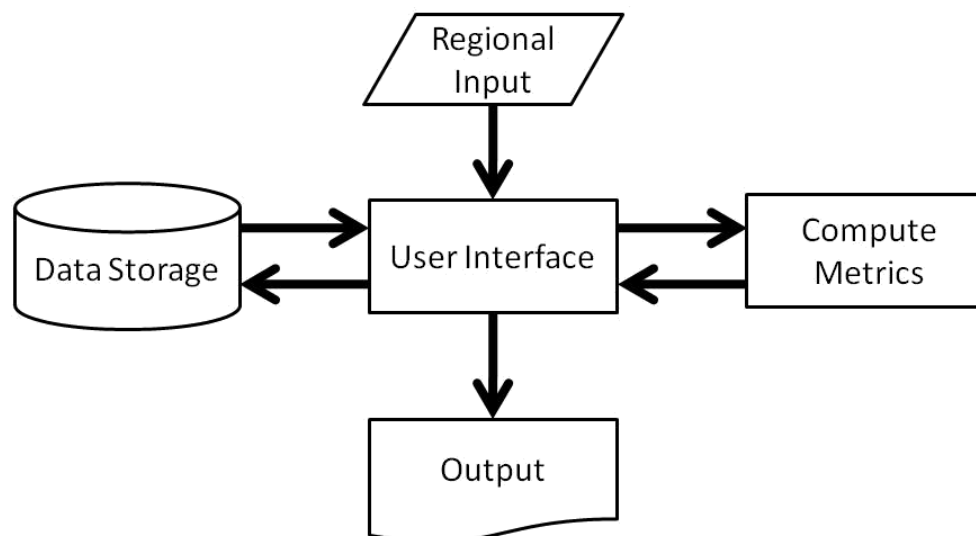- Input forms from five military regions and CJ7 team
- CJ7 requests import and storage of input forms
- CJ7 requests status report

CJ7

System Analysis

Transition Assessment Report

Military Regions

Input Data

Unit Observations

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Technical Approach – System Design

- **System Input:** the quantitative portion of the value model in a standardized form format, completed by military units

- **System Processing and Storage:** completed input forms templates are configuration controlled and ingested into data storage. User querying capabilities allow the retrieval of data (by unit and/or AOR and/or date range) to research trends

- **Analysis Output:** Condensed and easily understood presentation for decision makers

External System Diagrams

CJ7

EF.1

Assessing Transition System

EF.0

Region Data Collectors

EF.2

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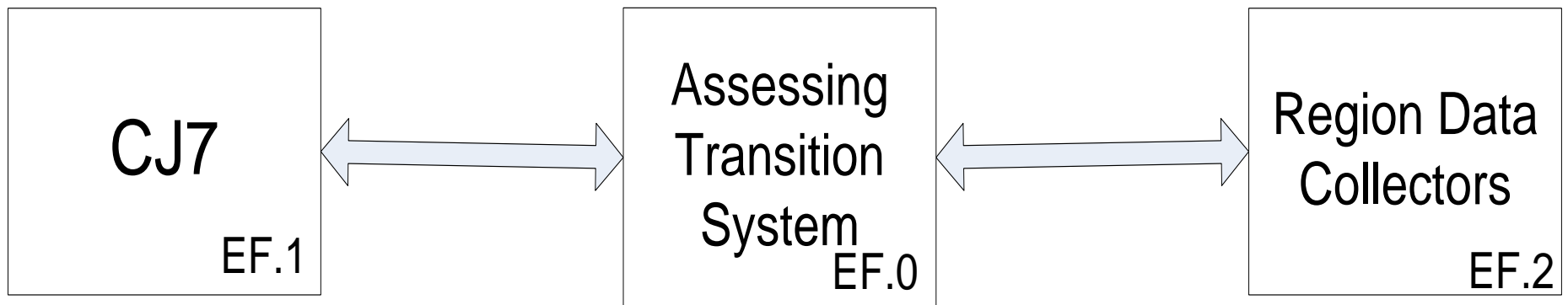
System Analysis Diagram

Received Region Data

Request for Status Report

Monthly Data by Region

Measure Transition Objectives of Security Operations in Afghanistan

F.0

Template Input Form

Status Report

Assessing Transition System

11

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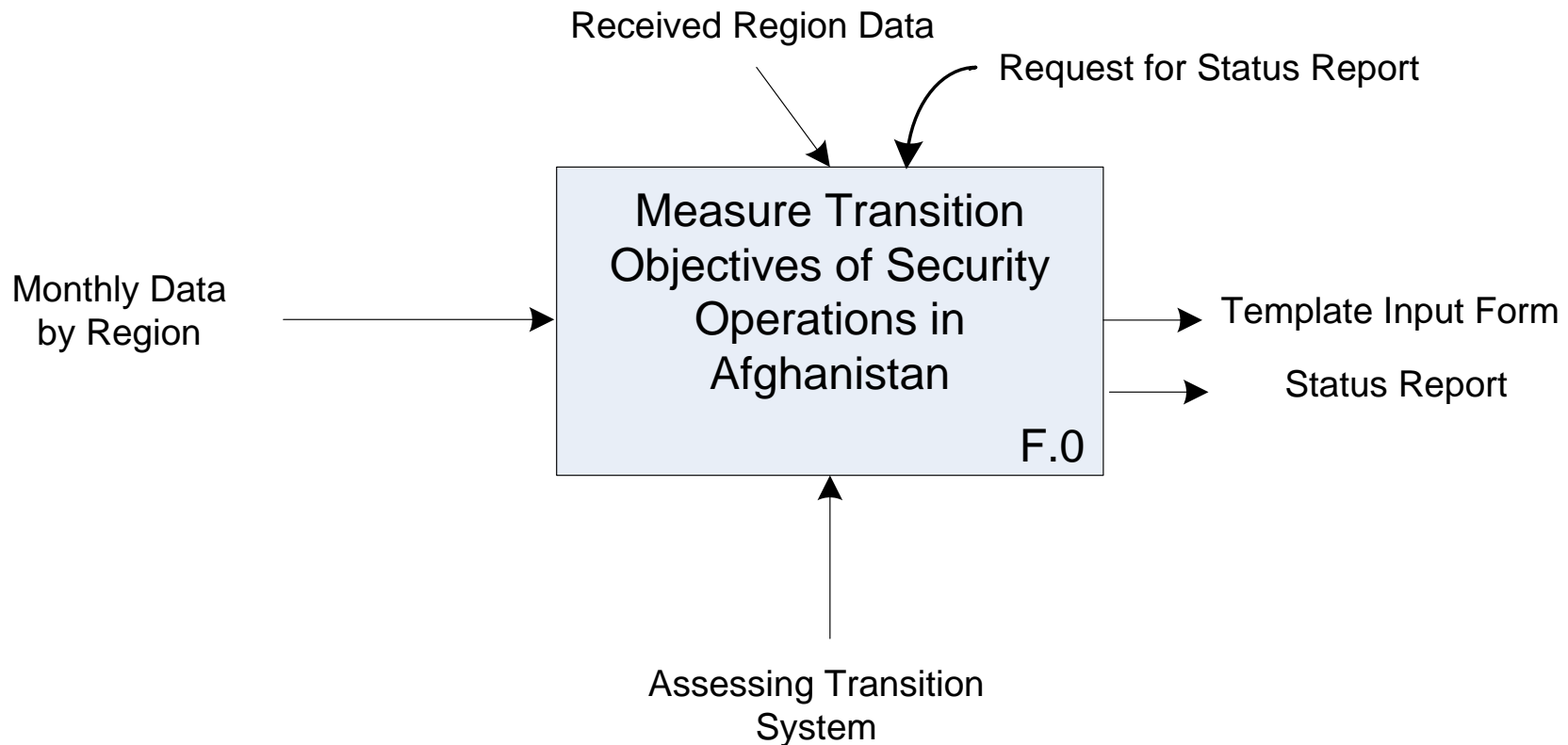
Functional Decomposition
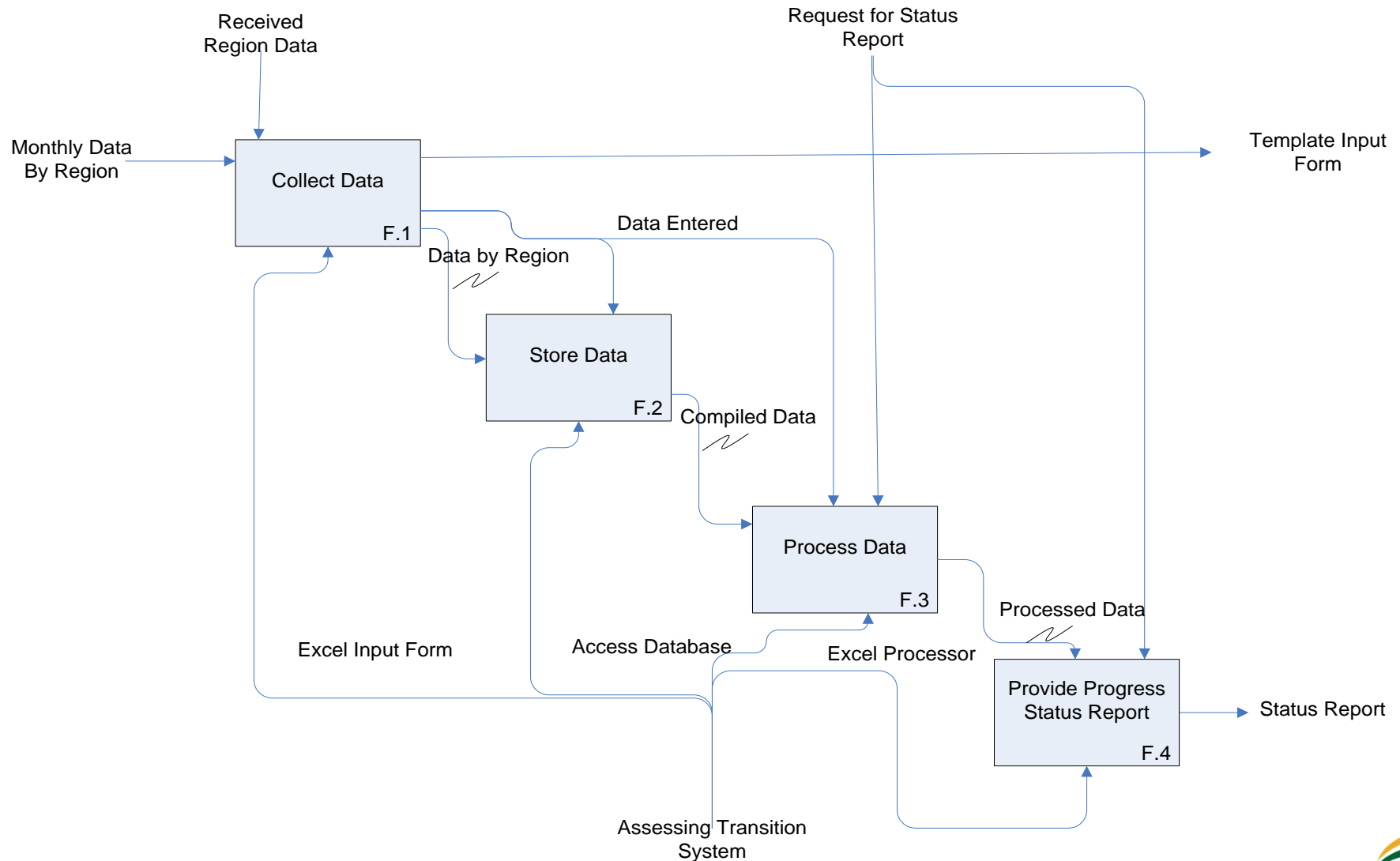
Physical Architecture

Operational Scenario – Scenario 1

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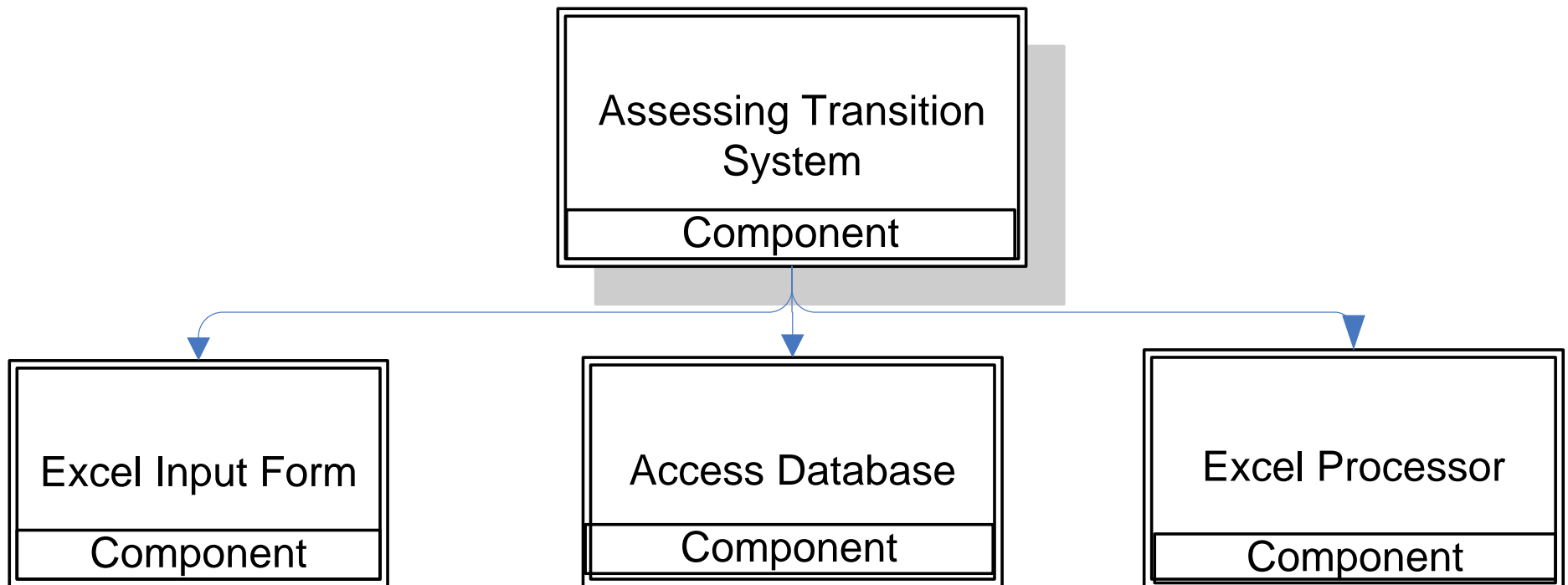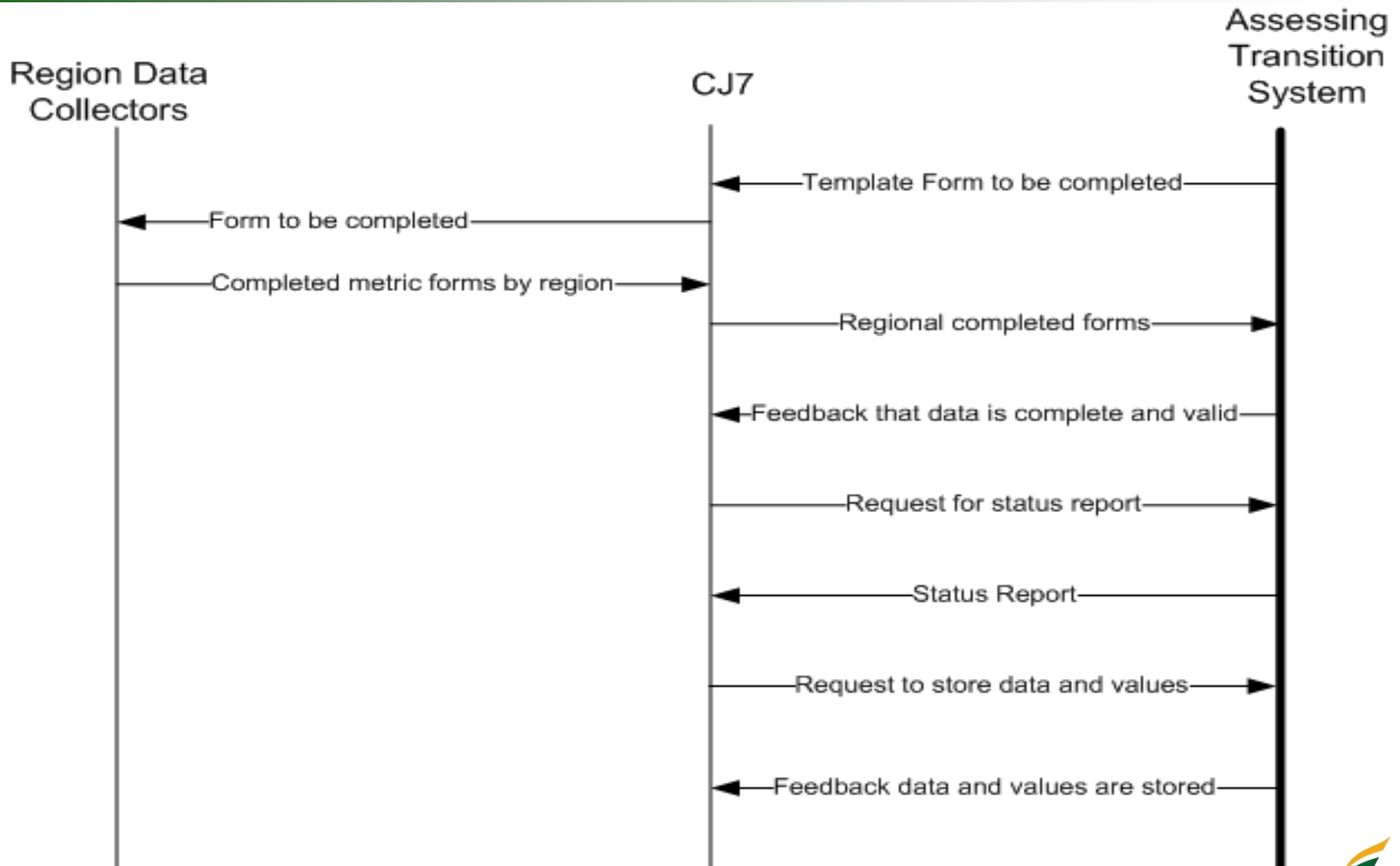
Operational Scenario – Scenario 2
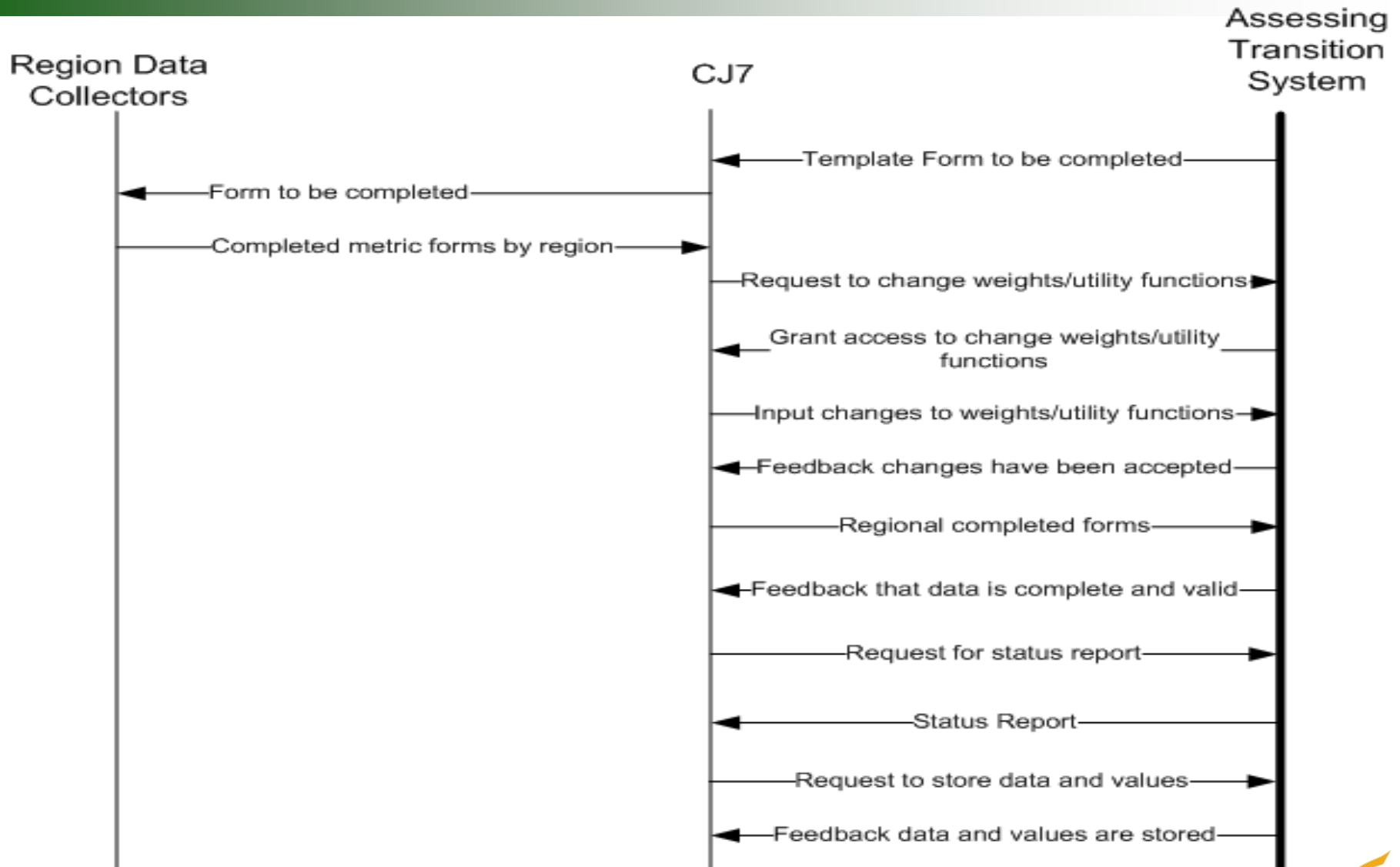
System Deliverables

- Data Processor
  - Includes Value Weight and Utility Input Forms
  - Produces Output That Allows Users to Assess Progress
- Storage Database
  - User Interface
  - Built-In Queries
- Pre-Built Regional Input Forms
- System User/Maintenance Manual
  - Includes contact information for assistance

16

Technical Approach – Value Model

- ## Qualitative Component
  - The identification of an objective hierarchy relating fundamental and means objectives

- ## Quantitative Component
  - The articulation of the decision maker's preferences towards the attributes, and the means of measuring each attribute

17

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Lines of Operation (LOO)

Transition Assessment

| Accelerate Growth of ANSF | Security for Afghan People | Marginalize Malign Actors | Accountable Governance | Community Development |
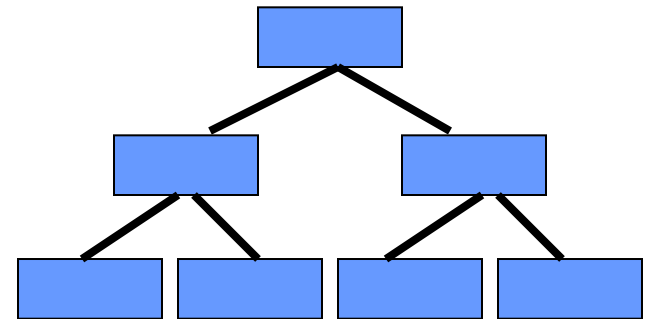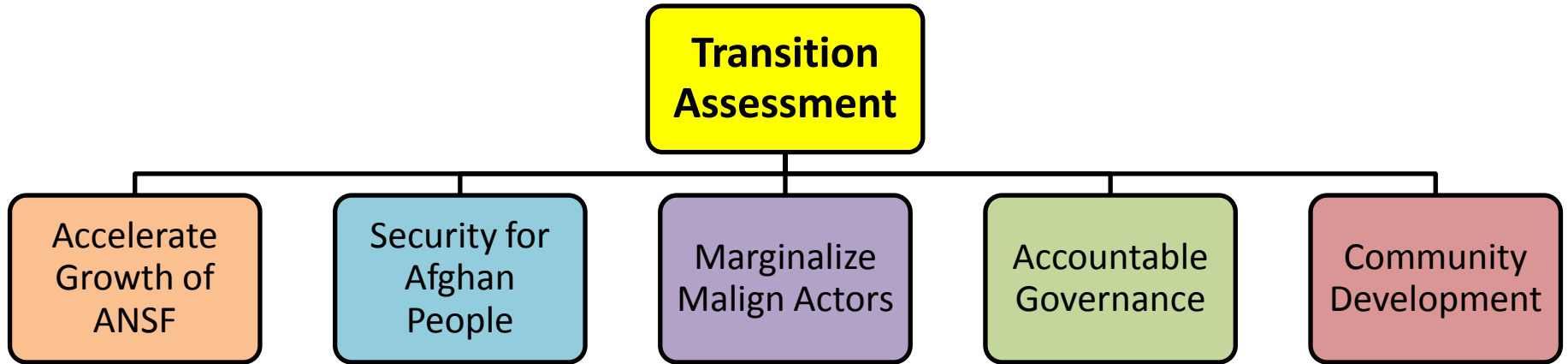
- Extensive literary review of what worked in Iraq and current methods and suggestions for succeeding in Afghanistan
- Organized under the LOOs removing any overlap, violations of independence, or things that could not be easily measured with clarity
- Developed metrics for remaining values and attributes within the hierarchy
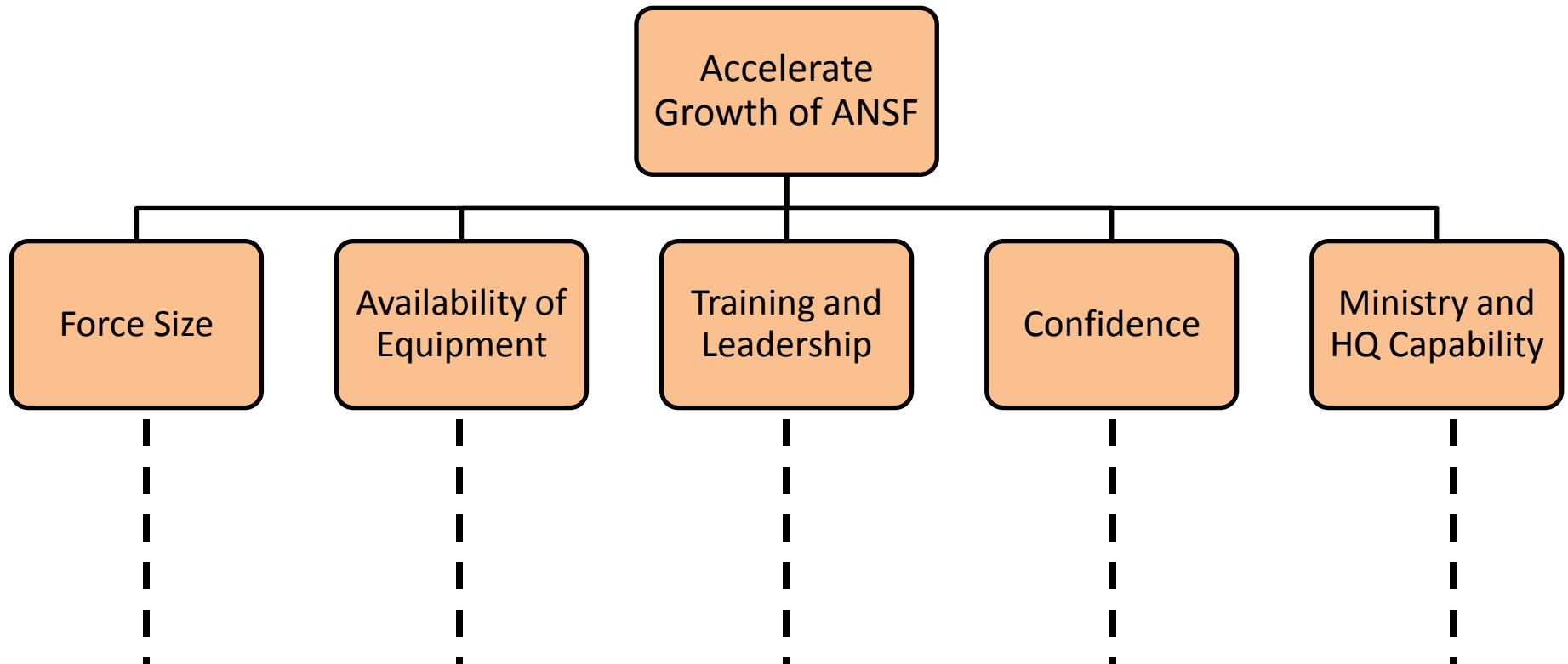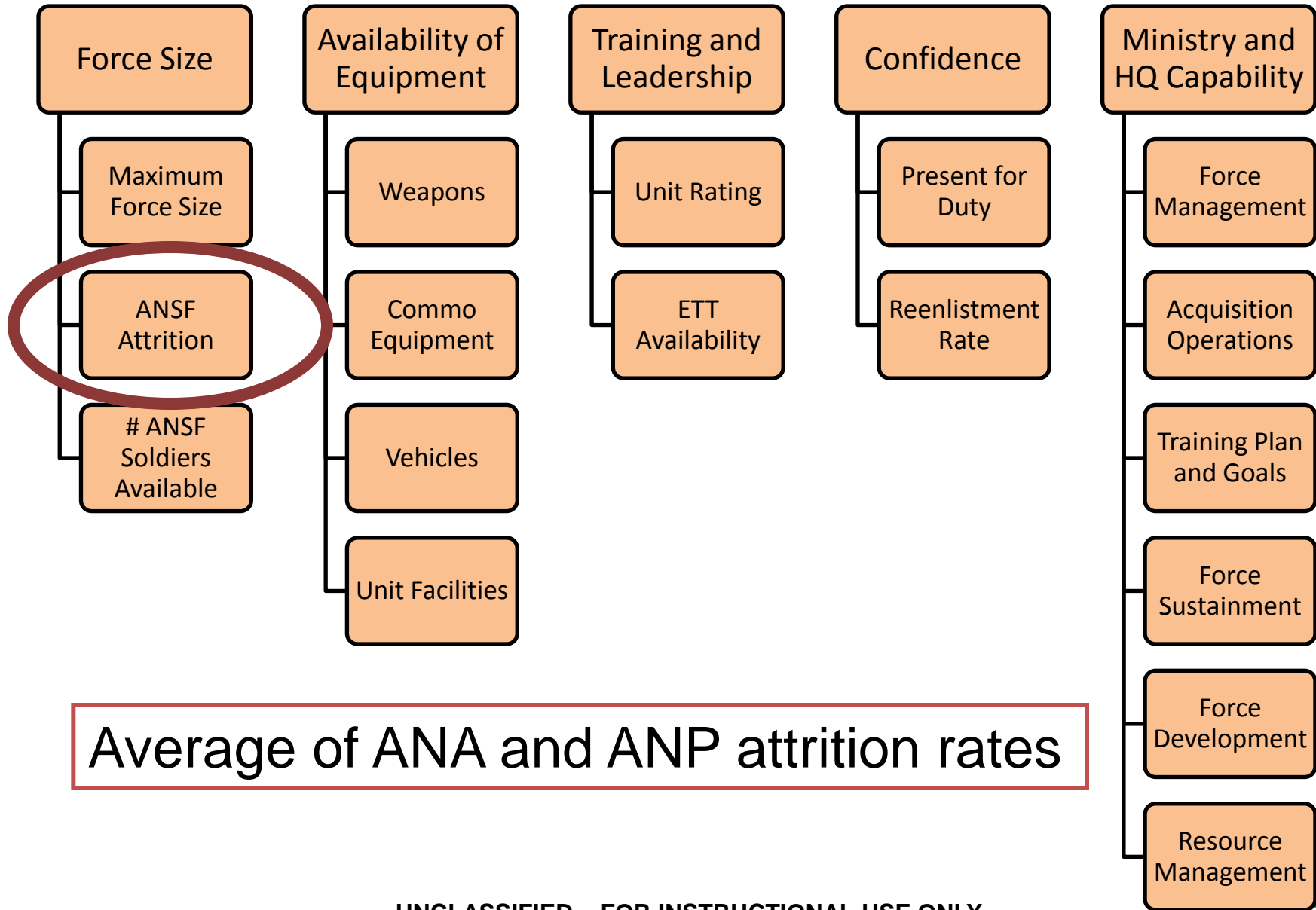
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Accelerate Growth of ANSF

Accelerate Growth of ANSF

Force Size	Availability of Equipment	Training and Leadership	Confidence	Ministry and HQ Capability
Maximum Force Size	Weapons	Unit Rating	Present for Duty	Force Management
ANSF Attrition	Commo Equipment	ETT Availability	Reenlistment Rate	Acquisition Operations
# ANSF Soldiers Available	Vehicles			Training Plan and Goals
	Unit Facilities			Force Sustainment
				Force Development
				Resource Management

Average of ANA and ANP attrition rates

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Security for Afghan People

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Marginalize Malign Actors
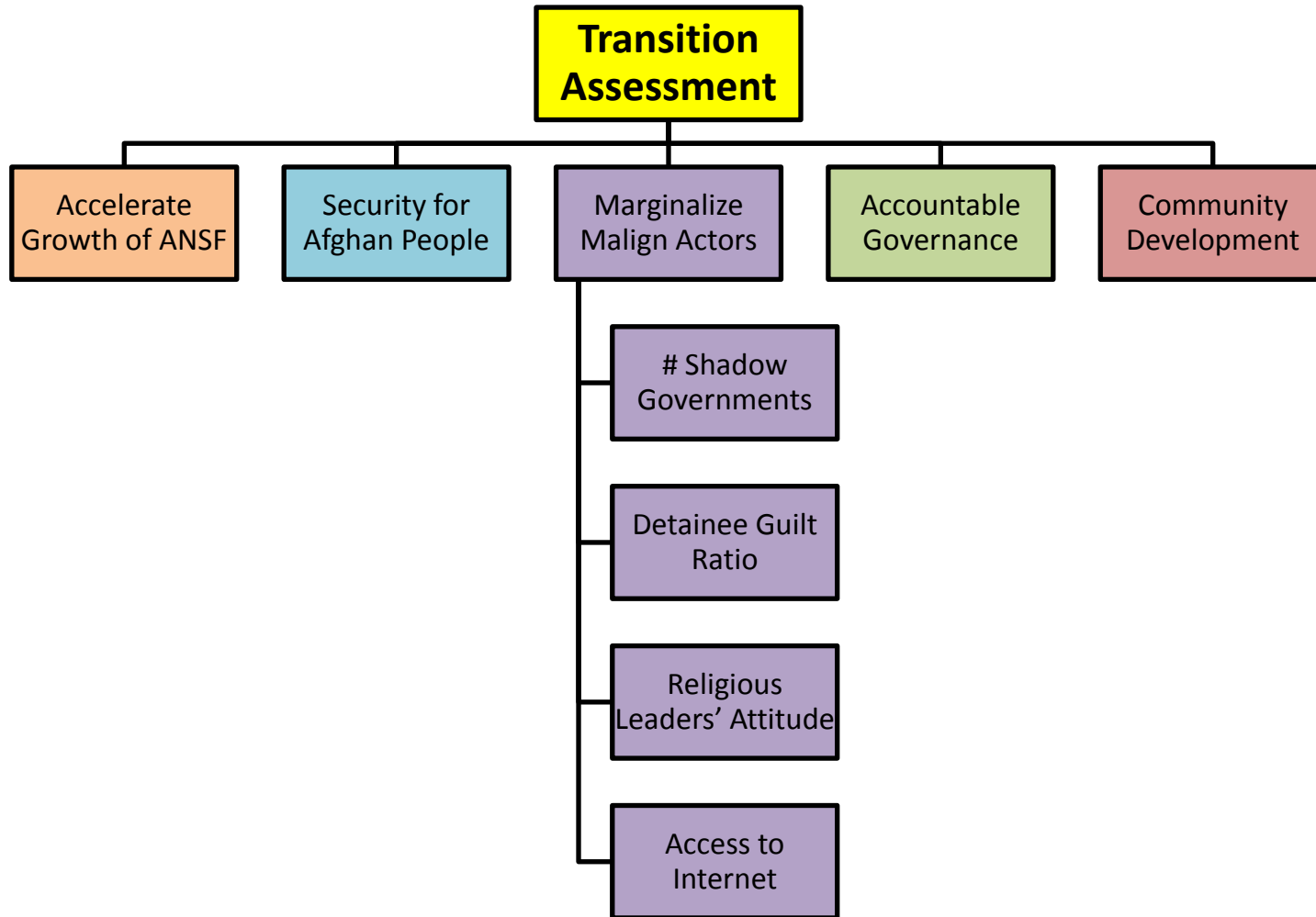
Accountable Governance
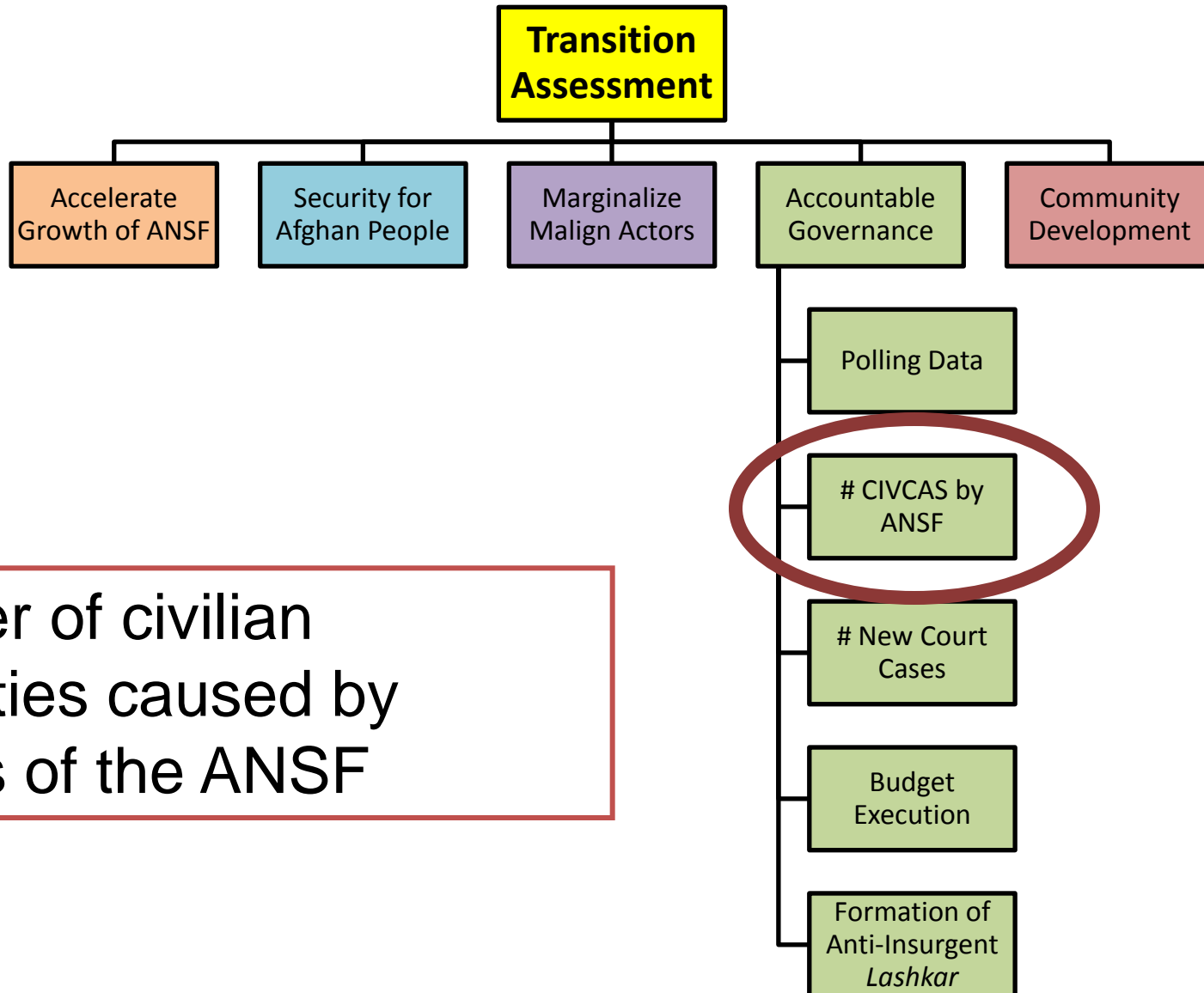
Number of civilian casualties caused by actions of the ANSF

Transition Assessment

- Accelerate Growth of ANSF
- Security for Afghan People
- Marginalize Malign Actors
- Accountable Governance
  - Polling Data
  - # CIVCAS by ANSF
  - # New Court Cases
  - Budget Execution
  - Formation of Anti-Insurgent *Lashkar*
- Community Development

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Community Development
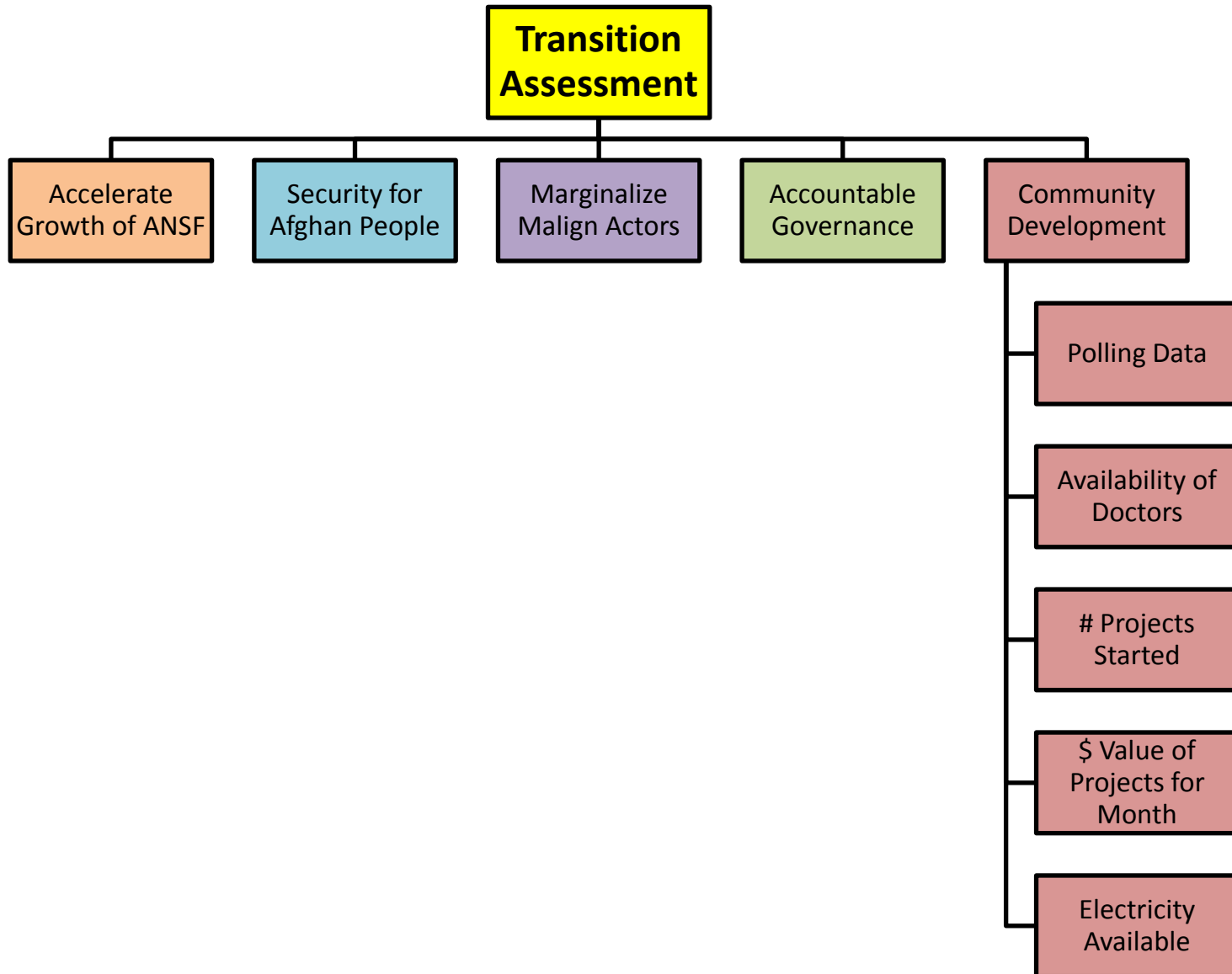
Additive Utility Function

- ## Attribute Characteristics
  - Do not overlap
  - Preferentially independent

- ## Additive utility function used for overall assessment
  - $V(x) = \sum w_i u_i(x_i)$
    - w_i = weight of attribute **i**
    - u_i = utility of attribute **i** at value x_i

System – Regional Metrics

|			
SFAP	Number of reported incidents of Afghan on Afghan violence during previous month:	5	
	Number of intel tips received from Afghan populous during past month:	20	
	Lowest price observed for FOOD 1:	14	
	Maximum price observed for FOOD1:	20	
	Lowest price observed for FOOD 2:	16	
	Maximum price observed for FOOD2:	18	
MMA	Number of detainees taken during past month:	30	
	Number of detainees held over seven days or turned over for prosecution during past month:	24	
	Number of religious services monitored during past month:	50	
	Number of religious services with a pro-insurgency message during past month:	6	
	Number of districts with known/suspected shadow governments operating within them:	2	
AG	Number of active, anti-insurgent Lashkar formations operating within region:	2	
	Number of civilian casualties caused by ANSF actions during previous month:	3	
CD	Number of new community projects started during past month from all sources within region:	10	
	Value (in $1000s) of all community development projects during past month within region:	90	
	Average number of hours electricity was on during previous month within region:	6	
	Number of practicing doctors within region:	5000	

As of Date:	4/26/2010
Number of missing fields	0

Notional Data

26

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System – Weight Elicitation

Assess Security for Afghan People Weights
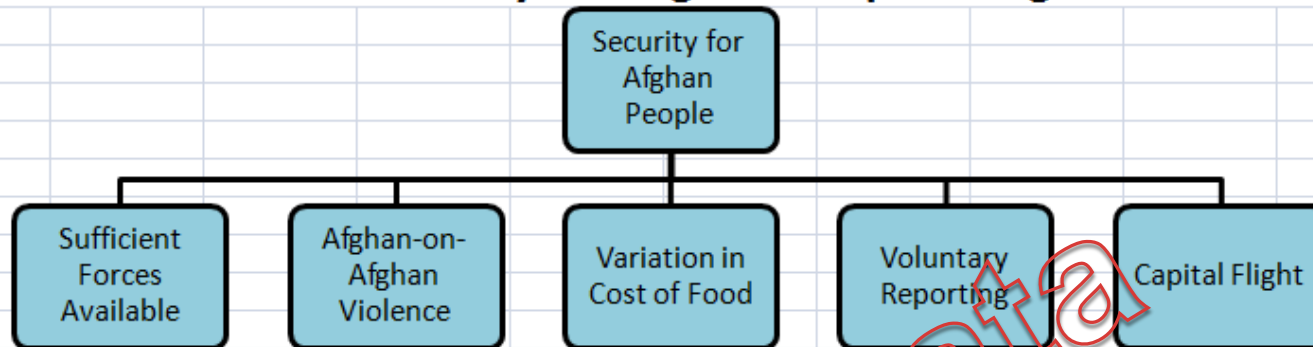
	Worst Case Value	Current Value	Best Case Value	Order of Importance	Importance Comparison	Rank Sum Weights	Swing Weights	Approved Weights	
Afghan-on-Afghan Violence	500	35	0	2	75%	25.0%	24.6%	24.6%	Afghan-on-Afghan Violence
Capital Shift	-20%	5%	20%	5	15%	6.3%	4.9%	4.9%	Capital Shift
Sufficient Forces Available	50%	93%	150%	1	100%	31.3%	32.8%	32.8%	Sufficient Forces Available
Variation in Food Price	$50.00	$10.00	$0.00	4	40%	12.5%	13.1%	13.1%	Variation in Food Price
Voluntary Reporting	0	120	125	2	75%	25.0%	24.6%	24.6%	Voluntary Reporting

Use Rank Sum Weights

Use Swing Weights

Clear Weights

Return to User Interface

System – Utility Elicitation
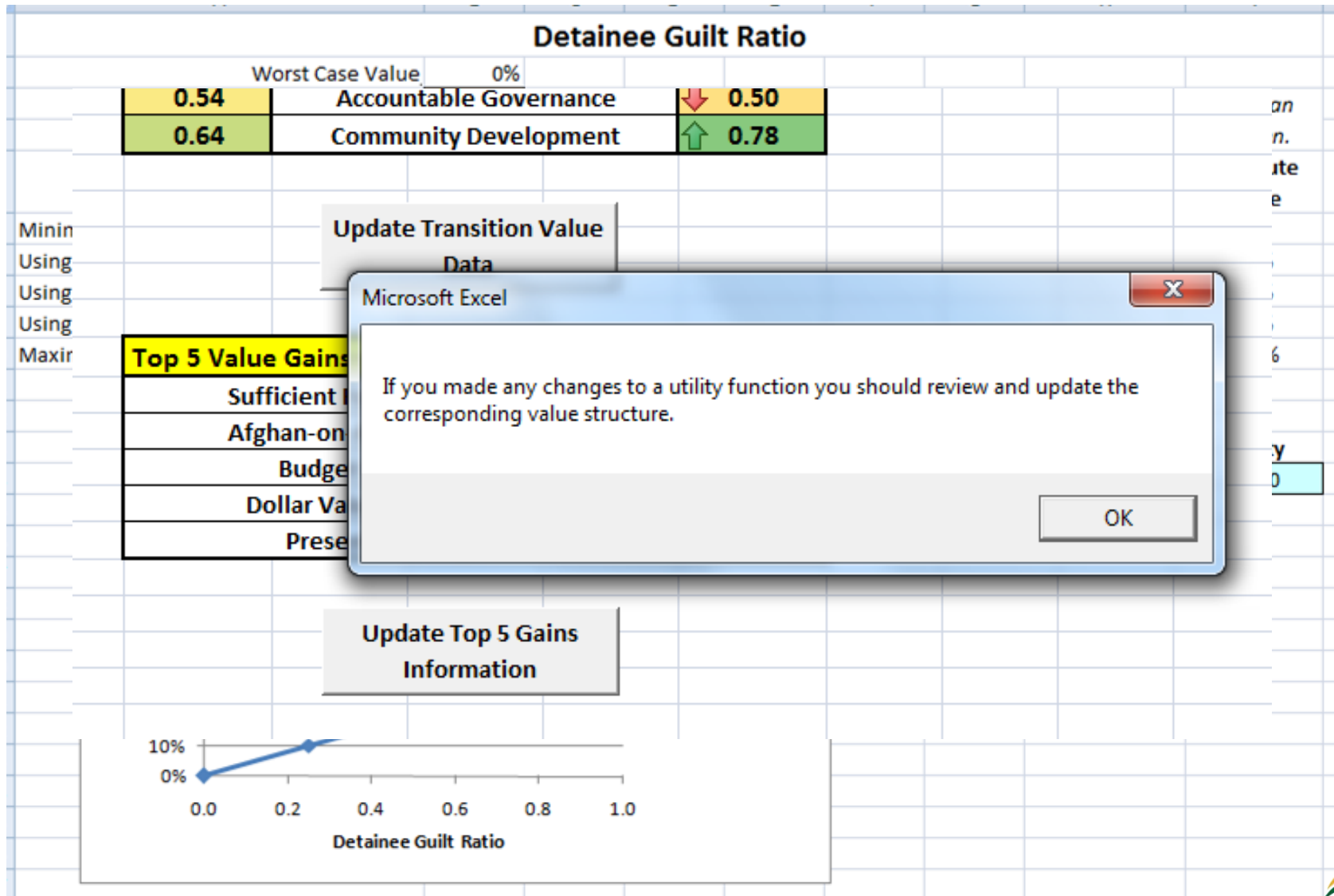
System – CJ7 User Interface

	ction Snapshot	MAY 2010 Data
Re	on Assessment	⬆ 0.64
Re		
Re	Growth of ANSF	⮕ 0.52
Re	r Afghan People	⬆ 0.69
Re	ze Malign Actors	⬆ 0.85
	ble Governance	⬇ 0.50
	ty Development	⬆ 0.78

Change the Value Weights

Change Accelerate Growth of ANSF Utility Functions

Change Security for Afghan People Utility Functions

Change Marginalize Malign Actors Utility Functions

ansition Value Data

Change Accountable Governance Utility Functions

Favorable 10% Change to Data

vailable, increase of 0.017
iolence, increase of 0.009
ion, increase of 0.009
ojects, increase of 0.009
ty, increase of 0.006

Change Community Development Utility Functions

Show All System Worksheets

Top 5 Gains
ormation

Hide All System

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System – Final Weights

Final Weights for LOOs and All Values

LOOs	Weight		Accelerate Growth of ANSF	Weight		All Values	Weight
Accelerate Growth of ANSF	31.3%		Availability of Equipment	26.7%		Detainee Guilt Ratio	11.36%
Security for Afghan People	25.0%		Confidence	20.0%		Sufficient Forces Available	8.20%
Marginalize Malign Actors	25.0%		Force Size	33.3%		Afghan-on-Afghan Violence	6.15%
Accountable Governance	12.5%		Ministry and HQ Capability	6.7%		Voluntary Reporting	6.15%
Community Development	6.3%		Training and Leadership	13.3%		Number of Shadow Gov'ts	5.68%
						Religious Leaders' Attitude	5.68%
						Number of CIVCAS	4.46%
						Unit Rating	4.17%
						Number of ANSF Available	3.47%
Reorder Values By Weight						Variation in Food Prices	3.28%
						Weapon Unit Sets	2.78%
						Budget Execution	2.68%
						Governance Polling Data	2.68%
						Unit Facilities	2.50%
Reset Values to Hierarchical Order						Access to Internet	2.27%
						Present for Duty	2.08%
						Availability of Doctors	1.84%
						Formation of Lashkar	1.79%
						Maximum Size of ANSF	1.74%
						Vehicle Unit Sets	1.67%
						Community Polling Data	1.47%
						ETT/MiTT Availability	1.39%
						Capital Shift	1.23%
						Number of New Court Cases	0.89%
						Communication Unit Sets	0.83%
						Hours of Electricity Available	0.74%
						Number of Projects Started	0.63%
						Acquisition Operations	0.60%
						Re-Enlistment Rate	0.60%
						Force Development	0.50%
						Force Management	0.40%
						Dollar Value of Projects	0.31%
						Force Sustainment	0.30%
						Resource Management	0.20%
						Training Plan and Goals	0.10%

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System – Output

(1 of 2)

LOO Values for MAY 2010 vs. APR 2010

	MIN			MAX

Utility of the Data	Weight
0.86	24.59%
0.70	4.92%
0.47	32.79%
0.52	13.11%
0.92	24.59%

Security for the Afghan People

0.69

Previous Value = 0.42

Volutary Reporting | 0 | 120 | 125

| Governance Polling Data | 0% | 71% | 100% | | 0.79 | 21.43% | Previous Value = 0.54 |

	MIN Value	Current Data Value	MAX Value		Utility of the Data	Weight	
Doctors per 1000 People	0	1.14	3		0.75	29.41%	**Community Development**
Dollar Value of Projects	$0	$450	$400		1.00	5.00%	0.78
Hours of Electricity Available	0	11	24		0.13	11.76%	
Number of Projects Started	0	42	50		0.94	10.00%	Previous Value = 0.64
Polling Data	0%	68%	100%		0.84	23.53%	

31

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Transition Assessment Values for MAY 2010 vs. APR 2010

Accelerate Growth of ANSF — 0.52 — Weight 31.3% — Previous Value = 0.52

Security for the Afghan People — 0.69 — Weight 25.0% — Previous Value = 0.42

Marginalize Malign Actors — 0.85 — Weight 25.0% — Previous Value = 0.23

Accountable Governance — 0.50 — Weight 12.5% — Previous Value = 0.54

Community Development — 0.78 — Weight 6.3% — Previous Value = 0.64

Transition Assessment — 0.64 — Previous Value = 0.42

Notional Data

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Conclusion

- Constructed a fully functional additive value model that meets the sponsor's needs and specifications
- Currently training deployed personnel and their replacements
- Road Ahead
  - Elicitation of decision maker's attribute and utility values
  - Verification and validation of model with those values
  - Refine values as required

33

Questions?

References

- Cordesman, Anthony H. , "*Afghan National Security Forces: Shaping The Path To Victory*", Center for Strategic & International Studies, July 2009
- Cordesman, A.H., "'*Shape, Clear, Hold, Build, and Transfer':The Metrics of the Afghan War*", Center for Strategic & International Studies, January 2010
- LtGen (Ret.) Dubik, James M., "*Accelerating Combat Power in Afghanistan*", Institute for the Study of War, December 2009
- Dubik, "*Building Security Forces and Ministerial Capacity: Iraq as a Primer*", Institute for the Study of War, September 2009

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- Livingston, I.S., Messera, H.L., and O'Hanlon, M., "*Afghanistan Index: Tracking Variables of Reconstruction & Security in Post-9/11 Afghanistan*", Brookings Institute, February 2010

- Killcullen, David, "*Measuring Progress in Afghanistan*", December 2009

- NATO Training Mission-Afghanistan, Combined Security Transition Command-Afghanistan Assessment Update, January 2010

System – CJ7 Metrics

	Metric	Value
Accelerate Growth of ANSF	Maximum ANA monthly basic training (enlisted and officer) throughput:	7,500
	Maximum ANP monthly basic training (enlisted and officer) throughput:	6,500
	Last month's ANA attrition rate:	6%
	Last month's ANP attrition rate:	6%
	Overall ANA force size end strength goal:	174,000
	Overall ANP force size end strength goal:	100,000
	Total ANA forces available for operations:	120,000
	Total ANP forces available for operations:	75,000
	Number of ANA brigades required to reach end strength goal:	30
	Number of ANP brigades required to reach end strength goal:	20
	Number of ANA brigade weapon sets on hand:	27
	Number of ANP brigade weapon sets on hand:	15
	Number of ANA portable communication (MANPAK/handheld/etc) brigade sets on hand:	25
	Number of ANP portable communication (MANPAK/handheld/etc) brigade sets on hand:	14
	Number of ANA vehicle brigade sets on hand:	26
	Number of ANP vehicle brigade sets on hand:	17
	Number of ANA brigade unit facilities (CP/barracks/etc) on hand:	24
	Number of ANP brigade unit facilities (CP/barracks/etc) on hand:	16
	Average ANSF unit rating (CM4-CM1):	CM2
	Number of ETT/MiTT personnel required:	1000
	Number of ETT/MiTT personnel currently on hand:	750
	Average ANA present for duty percentage for past month:	90%
	Average ANP present for duty percentage for past month:	85%
	Current ANA reenlistment percentage:	57%
	Current ANP reenlistment percentage:	45%
	Current ETT/MiTT assessment of Ministry and ANSF Force Management (CM4-CM1):	CM1
	Current ETT/MiTT assessment of Ministry and ANSF Acquisition Operations (CM4-CM1):	CM2
	Current ETT/MiTT assessment of Ministry and ANSF Training Plans and Goals (CM4-CM1):	CM2
	Current ETT/MiTT assessment of Ministry and ANSF Force Sustainment (CM4-CM1):	CM2
	Current ETT/MiTT assessment of Ministry and ANSF Force Development (CM4-CM1):	CM2
	Current ETT/MiTT assessment of Ministry and ANSF Resource Management (CM4-CM1):	CM2
SFAP	Number of Coalition and USFOR-A Soldiers in Afghanistan:	150,000
	Number of ANSF, Coalition and USFOR-A Soldiers KIA's in Afghanistan during past 12 months:	300
	Percent shift of capital holdings in Afghan banks over last month:	5%
MMA	Percent of population with internet access:	50%
	Number of new court cases opened during the past month:	500

Notional Data

37

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System – Database