



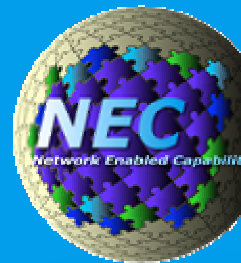
192 Effects-based planning

Mark Round

Project: Operational Command & Battlespace Mgt

Funded by: UK MoD Applied Research Programme

Given: 15 Sep 2004



QinetiQ

Intro

Effects-based planning

- Goals
 - More effective action
 - Focus on **accuracy** of effect achievement
 - not **precision** of ways
 - More efficient use of resources
 - Controlled thro focus on beneficial ends
 - use of analysts' expertise
 - Coherence w ith other instrum ents of pow er (dipl., econ ...)
 - Enable other DP better to support m ilitary ops
 - Enable the m ilitary DP better to assist other DPs' ops

Intro

Task approach

- Goal: specification for IS to support EBP at op level
 - Precondition: complete, consistent CONUSE
- Tasks
 - review EBP **concepts** for completeness & coherency
 - derive one coherent **lingua franca** for EBP
 - define the core **scenarios of use** for a support system
 - develop a suite of support **software** with high usability
 - test the suite by conducting a joint-ops-level **experiment**
 - **report** on candidate capability req'ts & context of use

Intro

Designing IS-based support for EBP

- Specifying CSCW support requires observation of **practice**
 - practice helps make cases accountable to process*
- ! But new process: no practice yet !
- Solution? 'breaching experiment'
 - deploy the innovation (e.g. process) 'in the wild'
 - observe what **ad hoc practice** it provokes
 - identify **resources** that users develop to support practice
 - incorporate both into developing spec/design
- Constraint: prototype for provocation & observation

*Crabtree, A (2003) Designing Collaborative Systems'.

Review

EBP concepts

- US JFCOM to create SJFHQs by 2005
 - ONA, SO SA, EBP – not clear how they are related
- JDCC maintain UK Joint Vision 2020, UK EBP concept
 - forward-looking, process-based description
- International research interest
 - two domains – history/doctrine, technology
 - concerns – EBO vs. EBT, -ive effects, behaviourism
- UK JFHQ – lessons identified & practice
 - continually evolving, ideal source of IS spec

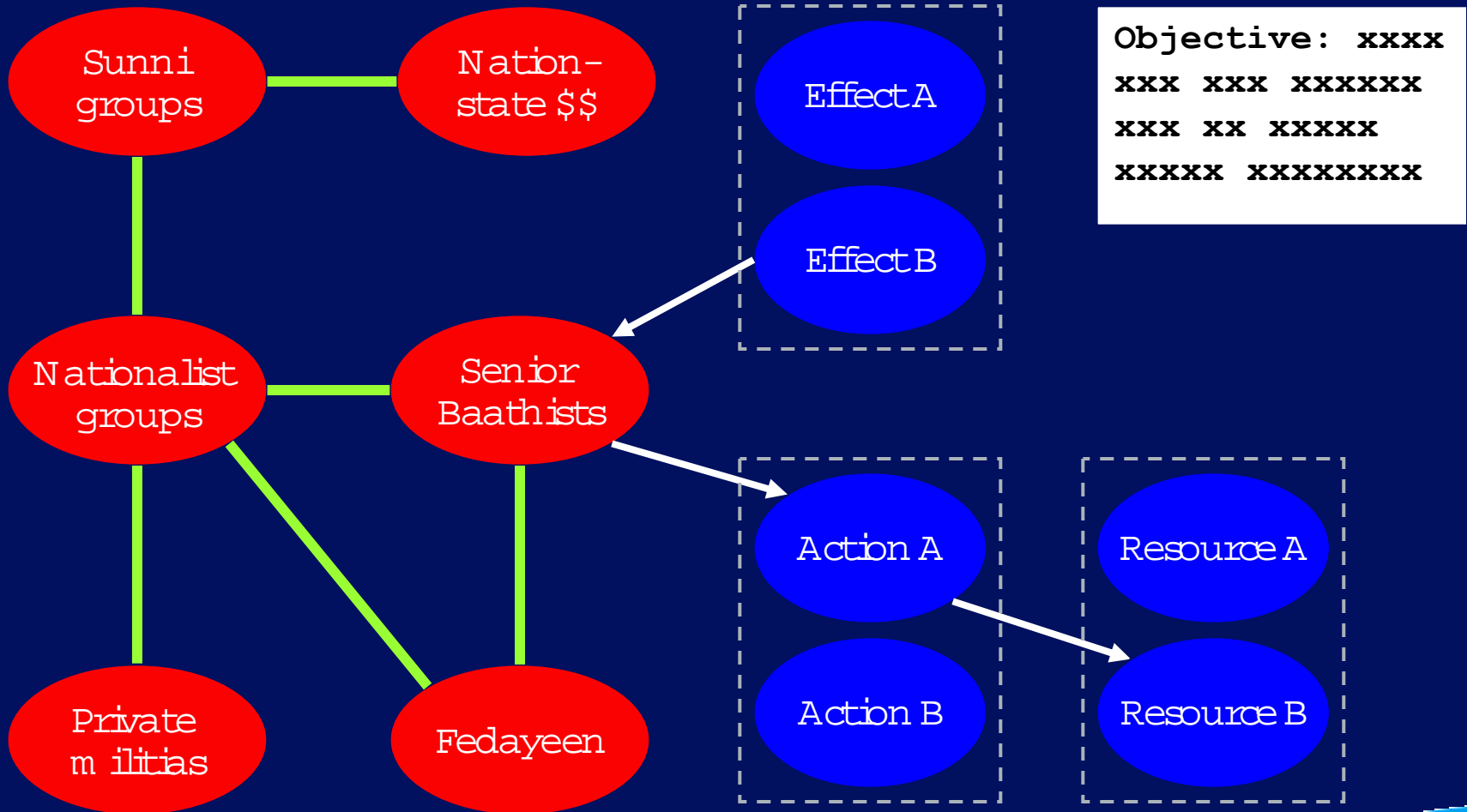
Review

Terms

- **effect** The physical and, or behavioral change in the state of a system that results from ... [an] action or set of actions. (JFCOM)
- **EBP** The process of translating strategic objectives into planned operations across the Instruments of Power that deliver the required effects. (JDCC)
- **node** 1. A person, place or physical thing within a system .
2. A juncture of one or more links that is any combination of people, materiel, facilities and information. (JFCOM)

Review

ONA /SO SA + EBP = ENAR chains (JFCOM)



Review

Effects assessment process (JDCC)

	T1	T2	T3	T4
E1	?	?	?	?
E2	?	?	?	?
E3	?	?	?	?

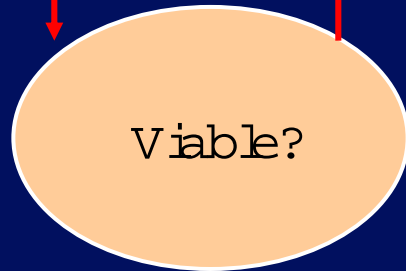
Effect/Target Pair

No

No

(destroy, leaders)

(destroy, troops)



Yes

Capable?

Yes

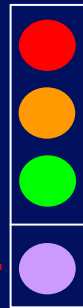
Yes

Willing?

No

Constraints

	T1	T2	T3	T4
E1	✓	-	-	✗
E2	✗	✗	-	-
E3	-	✗	✓	✓



+ve

-ve

2nd order effects

-ve

No

+ve

Language

Conceiving effects – a CoG approach

- DrStrange's model* – CoG –CC –CR/CV
- Start with a CoG (**key node**)
 - it has critical capabilities (**attributes of the node**) which make it a CoG
 - with critical req'ts/vulnerabilities (**influences from other nodes**)
- So, adapting JFCOM definitions...
 - **node** – A person, place or physical thing within a system ... that has influence or can be influenced.
 - **effect** – A physical and/or behavioural change in the state of a node that can be attributed to an action or effect, or a set or combination of them .

Use

Planning with effects

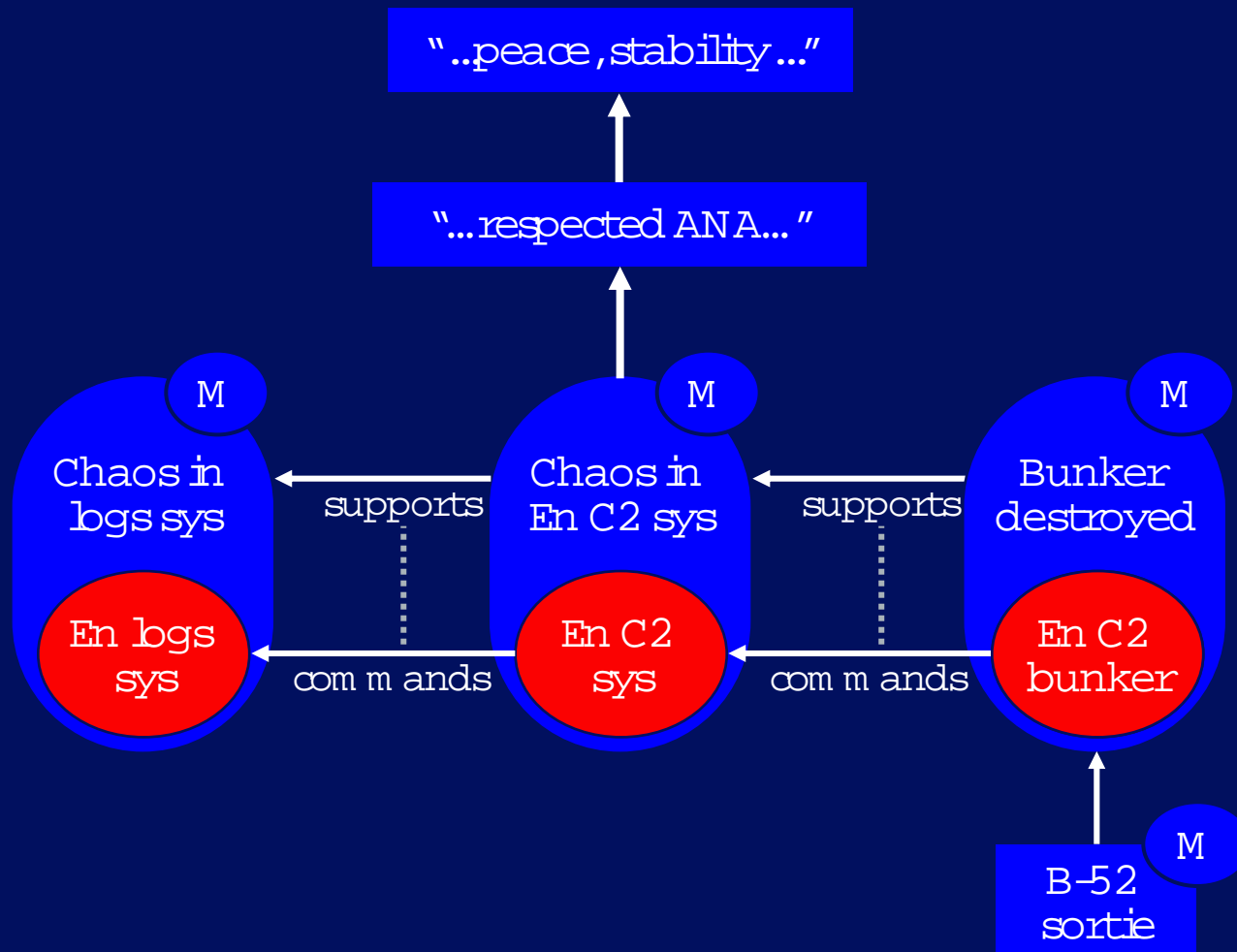
Am

Obj's

Effects

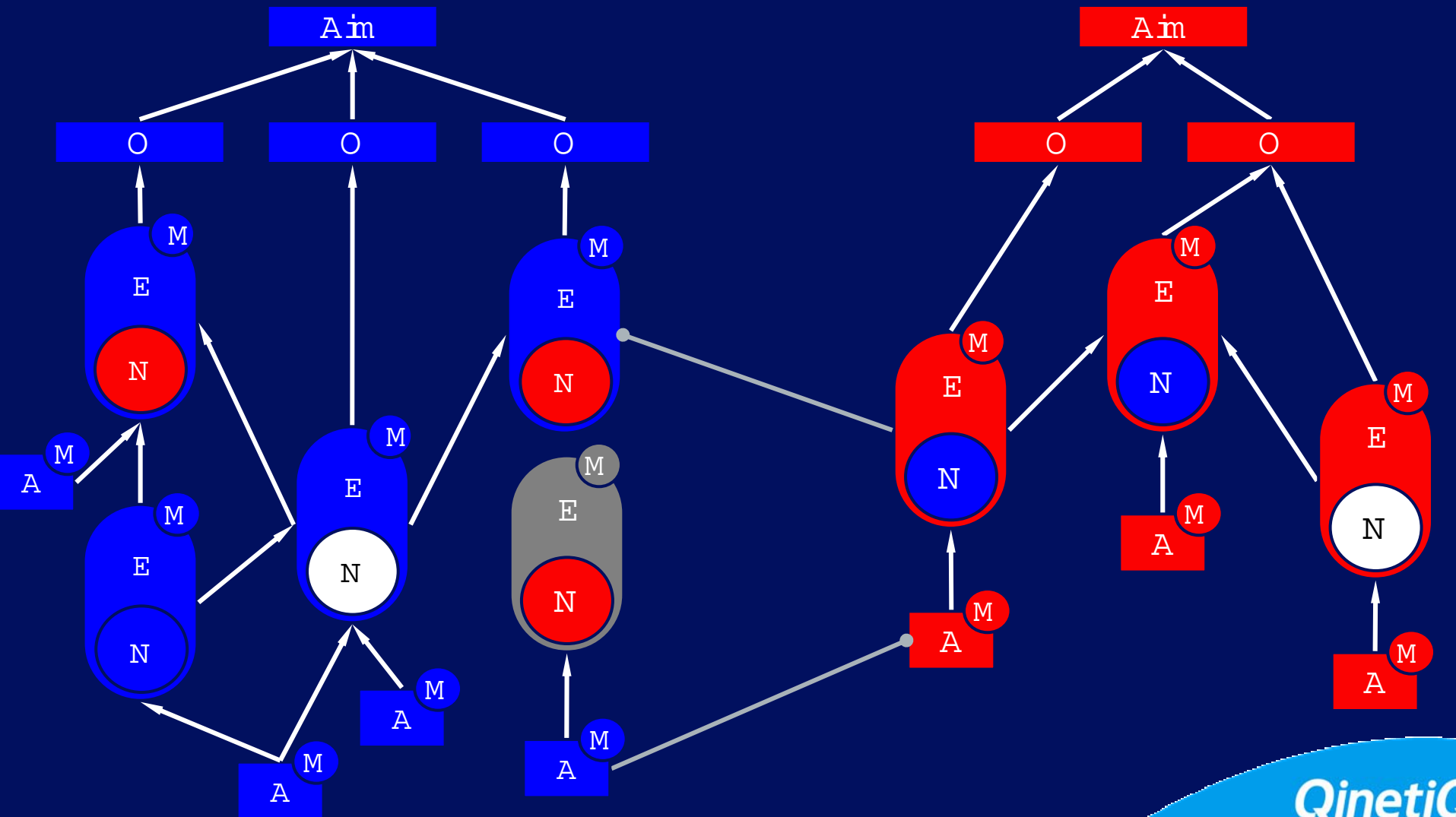
Nodes

Actions



Use

Visualising EBP: Courses of Effect



QinetiQ - NAV - Microsoft Internet Explorer

Edit View Favorites Tools Help

Search Favorites Media

http://saturn/experiment/Portal%20Content/Resources/webparts/initSOSA-LCD.html

STRATHQ Network Analysis View

Tools

Layout Help

Nodes Links

Nodes	Links
ARCASIAN President	
ARCASIAN Revolutionary Guard	
ARCASIAN Security Services	
ARCASIAN Southern Oilfields	
Delivery system	
Drinking and Sanitation Water Supply	
Drinking and Sanitation Water Supply	
Food Production	
Food Production	
Industrial Production	
Industrial Production	
LIBERATION Dam	
Military	
Missile plant	
Police	
Power Production	
Presidential Guard	
River SIMBER	

Properties

Name	ARCASIAN President
Ident	NIZ103001
Type	P Person
P-PMESII	Political
Focused	False

Tools
Network
Analysis
View

ATHQ Effects and Actions Assessment Table



View

Strategic Aim
 Strategic Objective
 Effect
 Effect Tgt-Grp Unsuitable Suitable Sub-Optimal Currently Unsuitable
 Action Unsuitable Suitable Sub-Optimal Currently Unsuitable

[EAAT FAQ](#)

No Filter

Create Strategic Objective Create Effect / Effect-Tgt Grp Create Action
 Effects Matrix PEL Current View Current View +

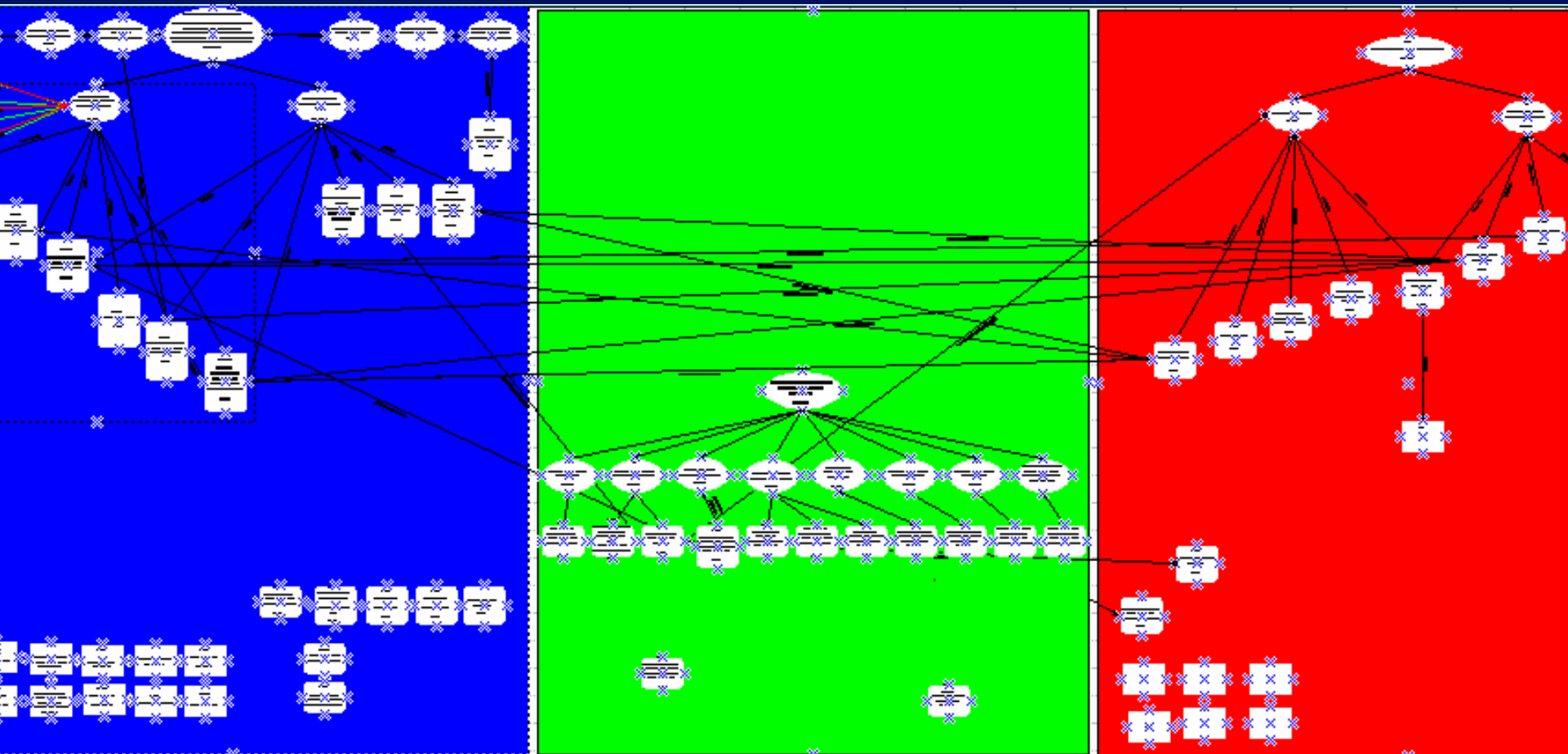
Ident	Type	Name	COE	Assmt	EM	PEL	Priority		
A05001	Action	Conduct robust Media campaign	UK	●	-	-	-	Modify	Delete
A05011	Action	Secure own Lines of Communication	UK	○	-	-	-	Modify	Delete
A03001	Action	Local Air Superiority	UK	●	-	-	-	Modify	Delete
A03002	Action	Conduct rapid and co-ordinated advance, sieze and hold limited territory	ARCASIA	●	-	-	-	Modify	Delete
A03003	Action	Attack key SYCADIAN infrastructure	UK	●	-	-	-	Modify	Delete
A03004	Action	Maintain own supplies	ARCASIA	●	-	-	-	Modify	Delete
A03005	Action	Conduct Rear area and key point security operations especially against SF	ARCASIA	●	-	-	-	Modify	Delete
A03006	Action	Conduct international Media campaign	ARCASIA	●	-	-	-	Modify	Delete
A03007	Action	Exert Diplomatic and economic pressure	SYCADIA	●	-	-	-	Modify	Delete
A03008	Action	Conduct international Media campaign	SYCADIA	●	-	-	-	Modify	Delete
A01001	Action	Request UK military support	SYCADIA	○	-	-	-	Modify	Delete

Tools
 Effects
 Rational
 Table



Tools

Effects Rationale View (from UK EBP expt)



QinetiQ - EAAV - Microsoft Internet Explorer

Edit View Favorites Tools Help

Address bar: <http://saturn/experiment/Portal%20Content/Resources/webparts/initERV-LCD.html>

Tools

STRATHQ Effects and Actions Assessment View

The diagram illustrates the following relationships:

- ARCASIA:** SO03003 points to SA00002 and SO03001. SA00002 points to SO03001. SO03001 points to SA00003 and SO03005. Strategic Actions E03011, E03012, and E03014 all point to SO03001.
- SYCADIA:** SA00003 points to SO03004 and SO03005. SO03004 points to SA00003. SO03005 points to SA00003.

Right-hand pane (Effects and Actions Assessment View):

Strat Aims	Strat Objs	Effects	Actions
Ensure SYCADIA territory and resource integrity.			
To ensure the sovereign territorial integrity of SYCADIA			
To Secure future water supplies for ARCASIA			

Properties:

Ident	SA00003
Name	Ensure SYCADIA territory and resource integrity



Closing remarks

Task approach

- Goal: specification for IS to support EBP (CRs, etc.)
 - Focus: Joint Force Headquarters (JFHQ) – operational
 - Precondition: complete, coherent CONOPS
- Tasks
 - review all EBP **concepts** for completeness & coherency
 - derive one coherent **lingua franca** for EBP
 - find the core **user goals & activities** needing support
 - develop a suite of support **software** with high usability
 - test the suite by conducting a joint-ops-level **experiment**
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Closing remarks

What value in EBP?

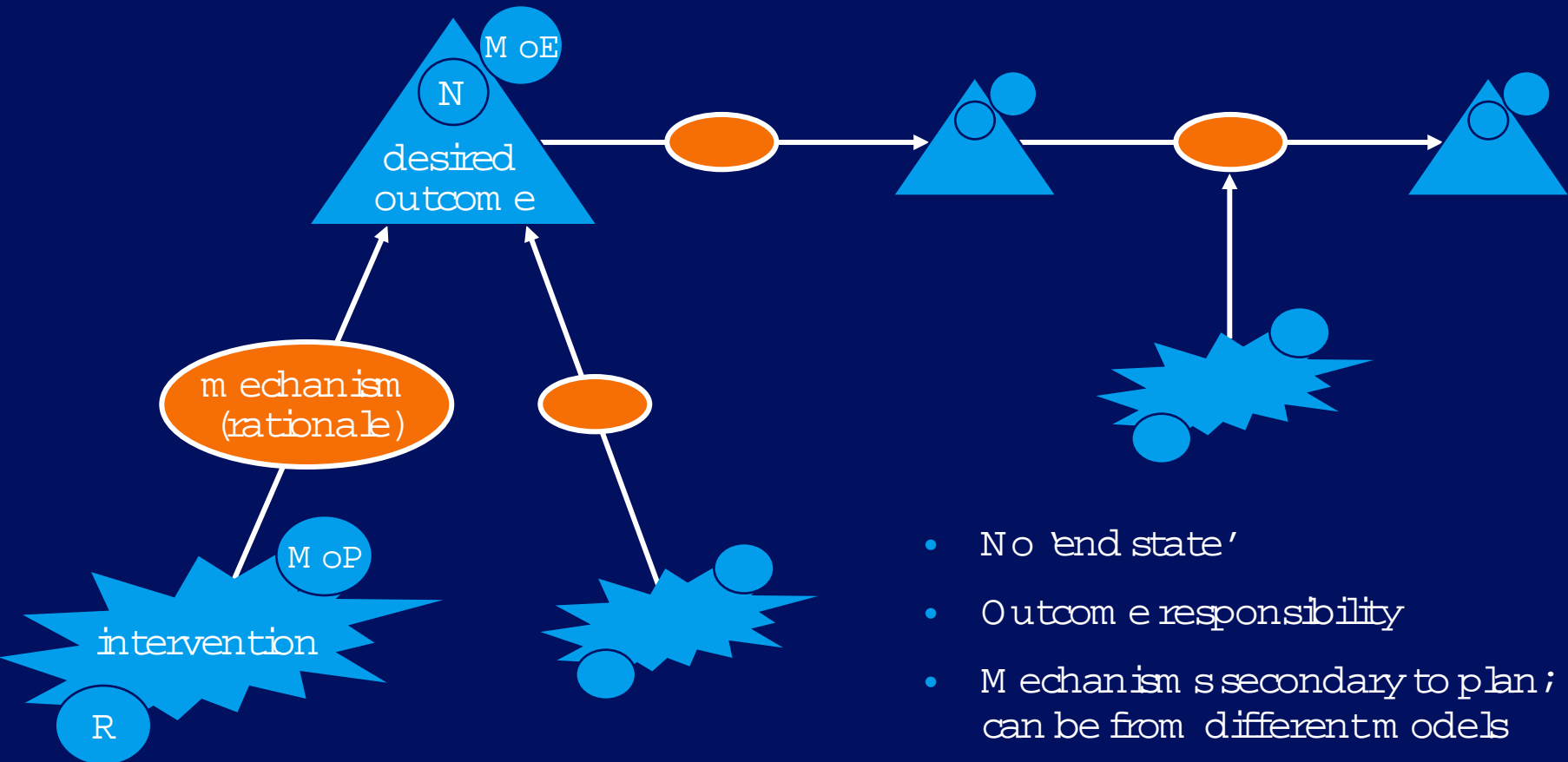
- Valuable elements
 - Emphasis on measurement → **verifying effectiveness**
 - Network-based analysis → **insights from network sci.**
 - Representation of other actors → **cooperation, etc.**
 - Outcome/state-based language → **clarity, rigour in DM**
 - Explicit rationale (ends-ways-means) → **communication**
 - Re-interpretation of existing practice → **better support**
 - **–?–** → **effectiveness of government's DP**

Closing remarks

But what is the central thesis of EBO ?

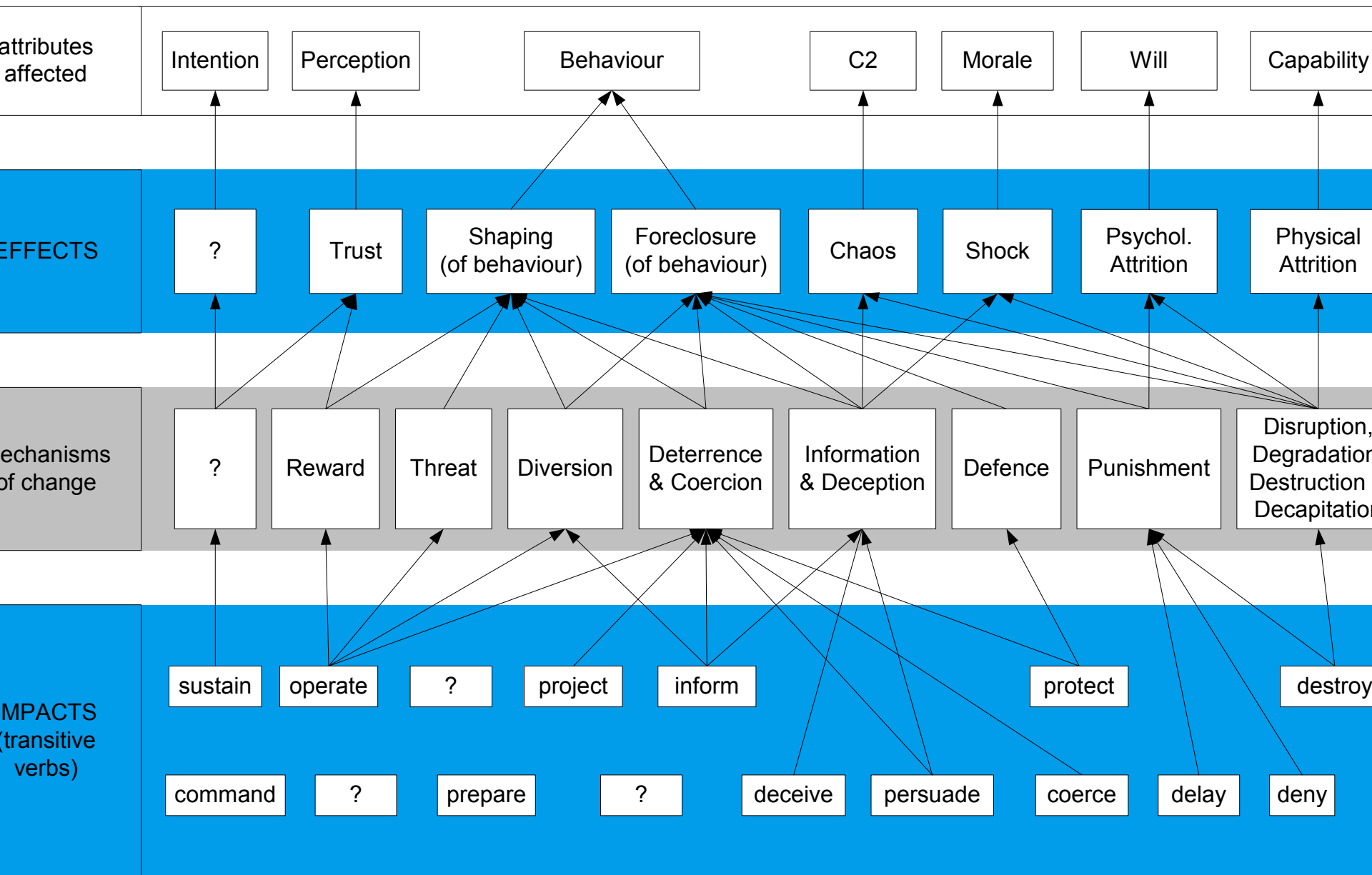
- NOT that the science/technology of... <snip> ... provides more precise ways of 'taking down' enemy systems.
- But
 - That precision of ways (esp. destruction of capability) is not an intrinsically valuable end – what matters is the accuracy with which we achieve desired changes in thought or behaviour.
 - That adopting this approach allows us to expand our repertoire of ways, and (therefore) improves our ability to select options that are effective & efficient at achieving policy ends.
 - That the adoption of this philosophy will require a change in the language used in Western powers to describe intentions and actions in operations.

A language for planning



- No 'end state'
- Outcome responsibility
- Mechanisms secondary to plan; can be from different models

Lexicons of effect : QinetiQ, JDCC, Smith



Issues

- How could the solution be instantiated?
- Is this approach scalable?
- Does it provide an effective means of developing & communicating rationale?
- Does it support users comprehending the complexity of effects?
- What are the fundamental components? What must be in place?
- Does this framework allow all interested parties to collaborate effectively?
- Is it rich enough? Are all parts of the framework necessary?
- How manageable would such a product be for a real operation? Is this complexity already a part of operational planning?
- Might some effects be grouped into clusters, with collective influence on other effects/actions?

How ?

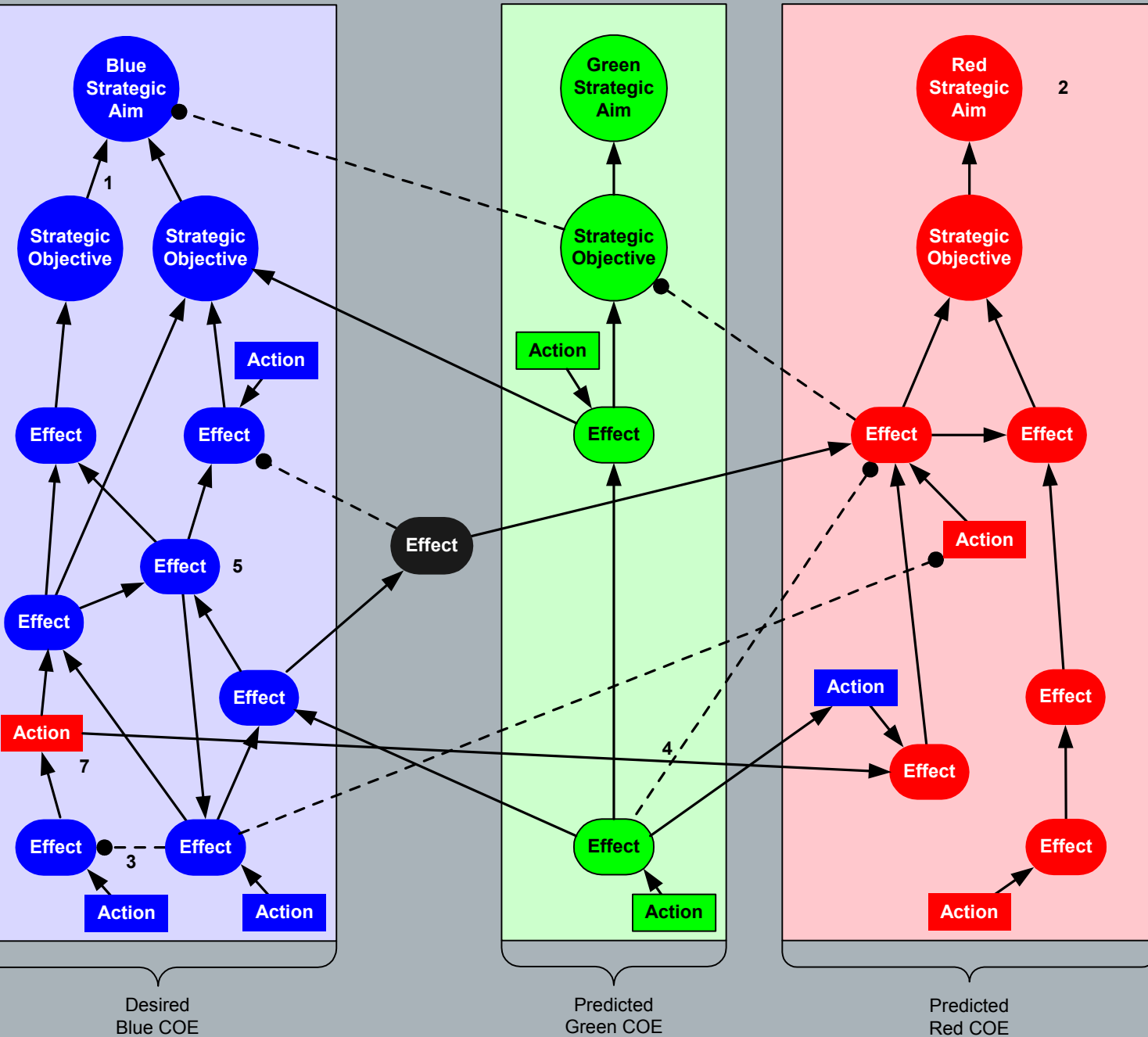
Some questions remaining

- What purpose planning?
 - Planning as a process specified in doctrine and SOPs;
 - Planning as an example of expert decision-making;
 - Planning as a special kind of design;
 - Planning as a complex group activity.
- Measuring success – what, how ?
- Understand interactions between EBP &
 - decision-making styles,
 - organisation structure (HQ+),
 - equipment, etc.

EBP

8 Q's for EBP

- 1. What has happened?
- 2. What **direction** have I been given and why?
- 3. Who are the main **Actors**, what are their **Strategic Aims** & **Key Nodes**?
- 4. What **Attributes** of each KN make it key for this Op, what **Effects** in these do we (not) want, & how will we **measure** success in this?
- 5. What **Actions** (by any actor) might support or impede these effects?
- 6. What **Influences** on each KN might support/impede each Effect?
- 7. What **Effects** in these nodes would affect their influences on the KN?
- 8. **When** and **where** do these Effects and Actions take place?



Effects Rationale

- COEs/COAs
- Blue, Red, Green (White) Intentions
- Iterative w/arguing
- Undesired Effects
- Coercion

RE214 OperationalCBM Project

...addressing the need for enhanced support for Planning, Command & Control and Logistics at the Strategic and Operational levels of command in order to improve operational effectiveness...

OperationalCBM project

- Purpose: greater operational effectiveness
- Goal: specifications for enhanced IS support
- Focus: planning, command & control, logistics at strategic and operational levels of command