

DEFENCE



DÉFENSE

Common Intent and Information Processing Frameworks applied to Effects Based Approaches to Operations

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Today's Military Operations ..



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Outline

- Common Intent and the Sports Analogy
- Team Information Processing
- Multinational Experiment 4
- Results and Discussion
- Conclusion



Common Intent

Pigeau & McCann (2000) decompose Common Intent into two parts:

1. Explicit Intent

"intent that is made publicly available through orders, briefings, questions and discussions"; and,

2. Implicit Intent

"the interpretation of explicit intent ... derive[d] from personal expectations, military training, tradition and ethos and from deep cultural values".

This is a top down view of Common Intent.



Sports Analogy



- High Level Common Goal
- Goalie, Defence, and Offense have different Competencies, Authorities, and Responsibilities (CAR)
- Common Intent exists when:
 - Perceive coaches instructions
 - Interpret instructions wrt team CAR (Explicit Intent)
 - Actions are consistent with each other (Implicit Intent).

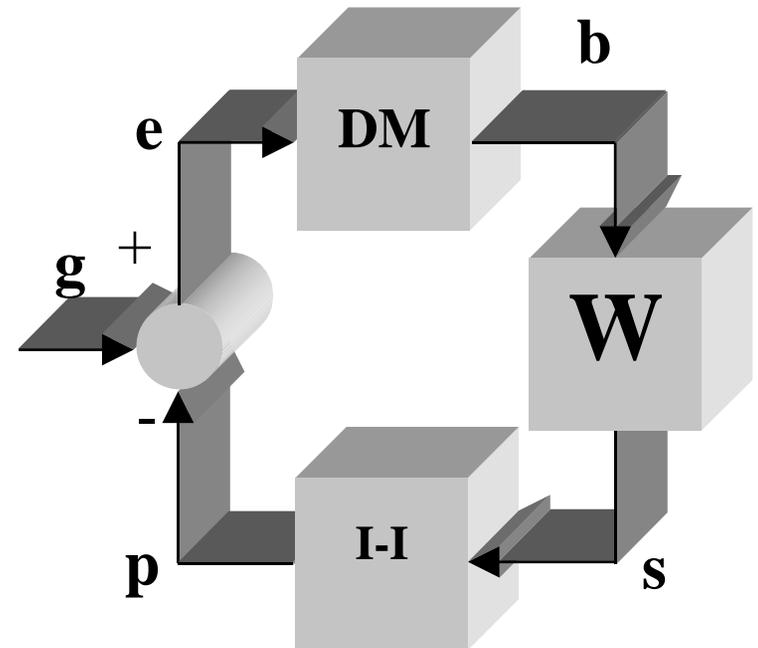
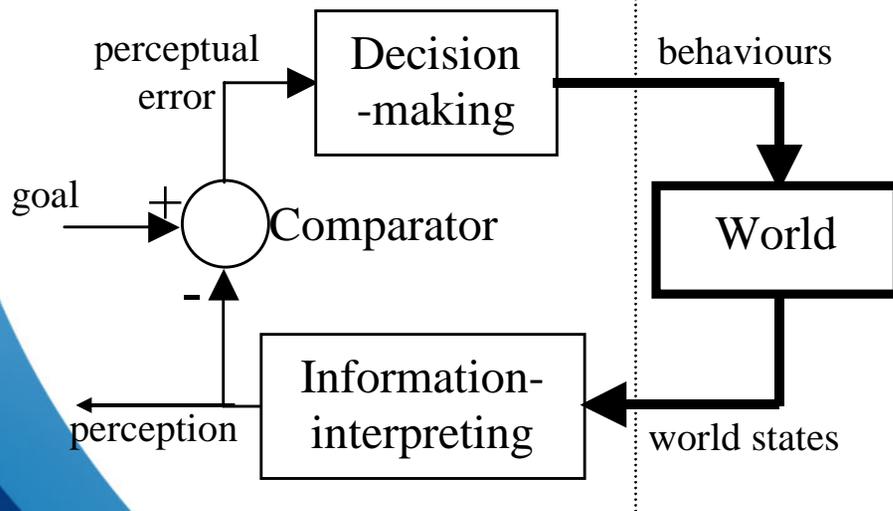


Team Information Processing

Is it possible to describe Common Intent from the bottom up?

That is, from an information processing framework?

Human Information Processing (HIP)

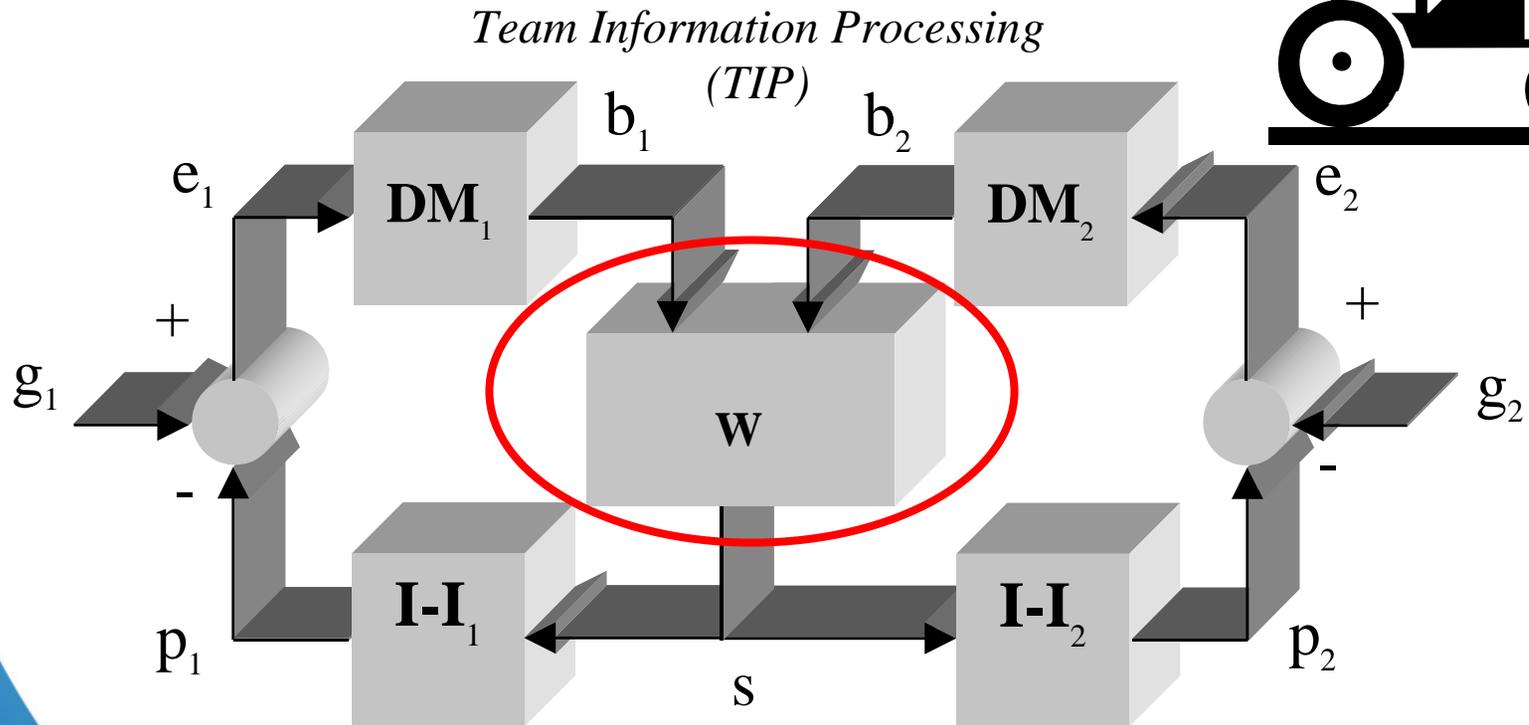
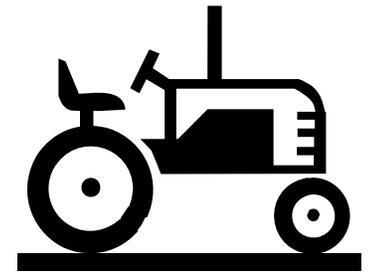




Team Information Processing

wheel barrow

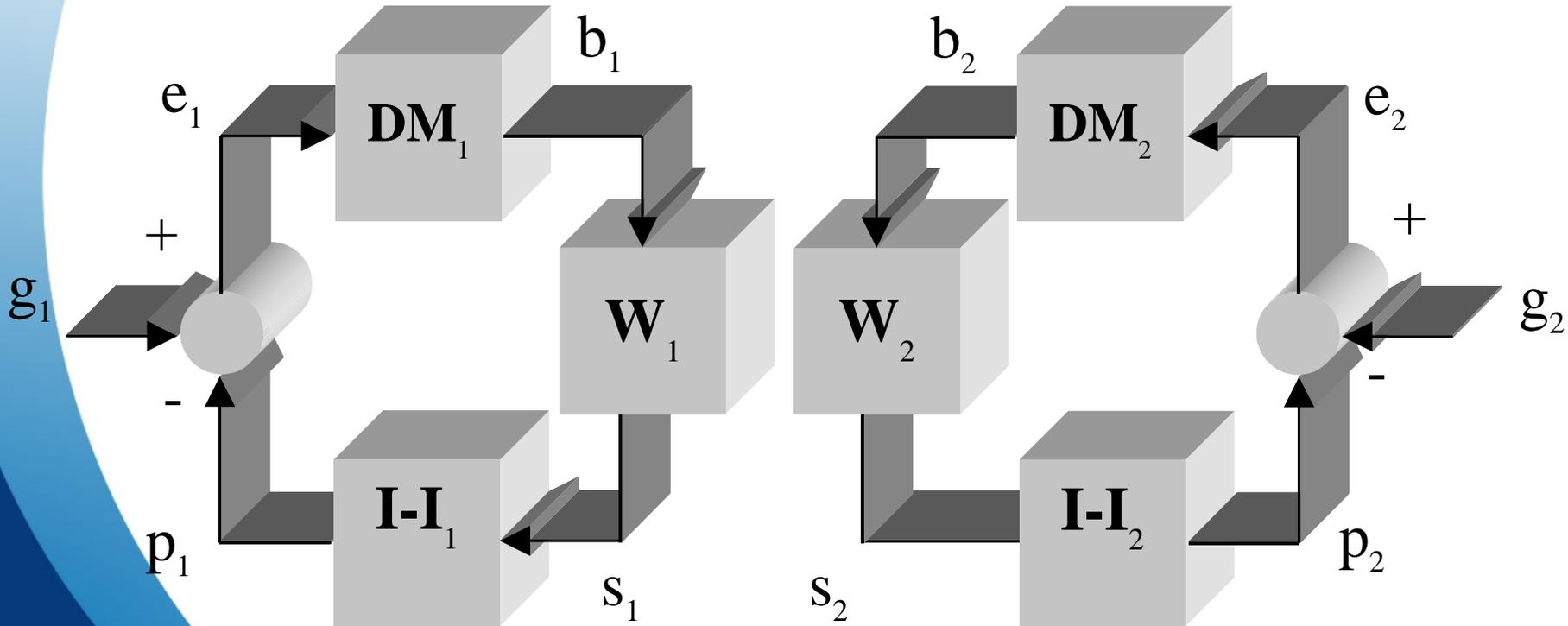
Two people interacting...





Team Information Processing

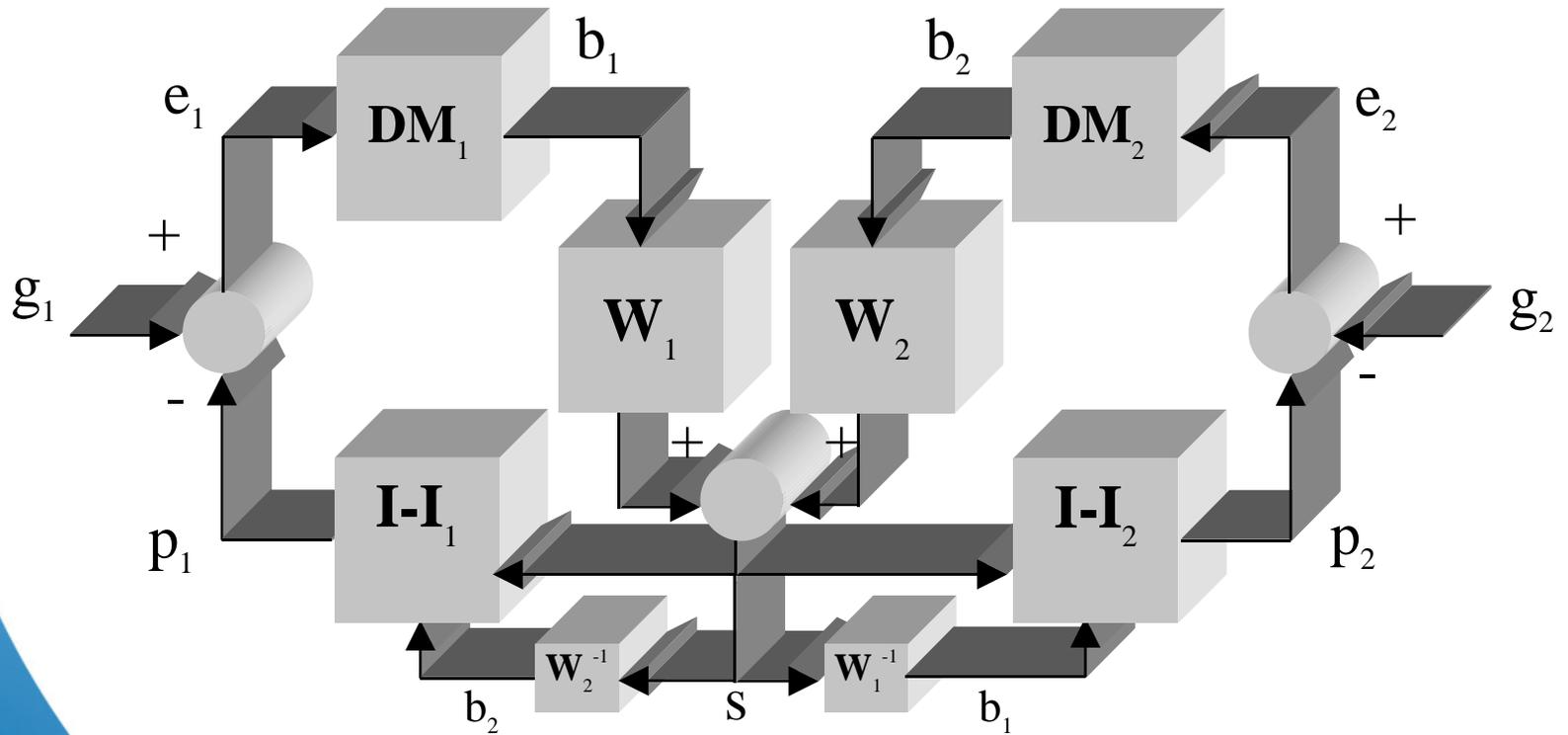
Explicit Intent decouples the interaction...





Team Information Processing

Implicit Intent partially couples the interaction...





CI and TIP

- **Explicit Intent** helps **stabilize** team interaction by understanding each others CAR in light of the instructions or the common goal.
- **Implicit Intent** helps **optimize** team interaction by anticipating each other's behaviours and by acting consistently with each other.

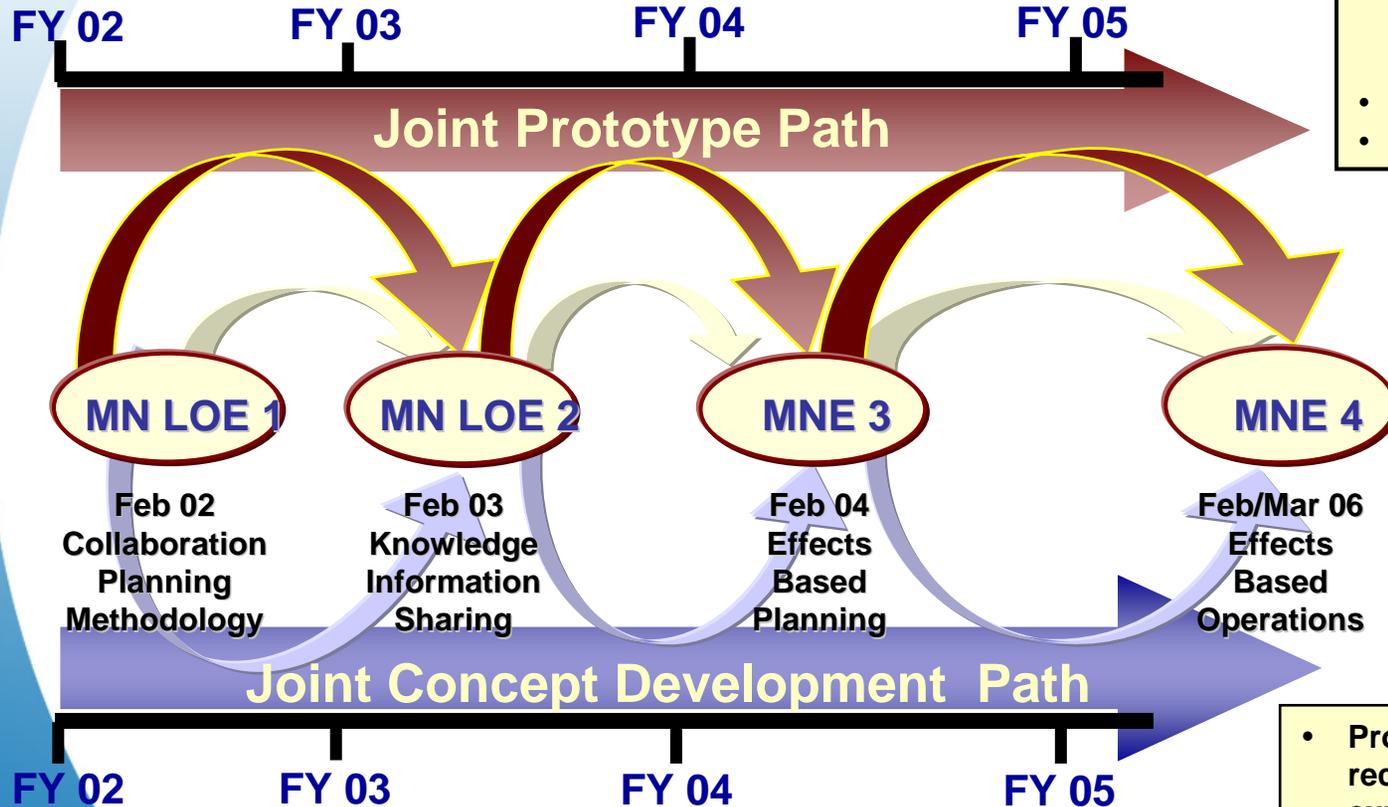


Multinational Experiment 4

- Common Intent and the Sports Analogy
- Team Information Processing
- **Multinational Experiment 4**
- Results and Discussion
- Conclusion



Multinational Experimentation 4



- Pursue rapid, prototyping of capabilities to improve joint warfighting now
- SJFHQ
- CD/CIE

- Provide actionable recommendations from experimentation results to senior leaders to inform options for future force investments



Problem Statement

- Joint and combined warfighters lack the integrated process, organization, and technology to **plan, execute** and **assess** effects based operations (multinational and interagency) based on a **holistic and dynamic understanding** of the operational environment using all of the nations' elements of power.

MNE 4 Aim

- To explore [**assess** and **refine**] concepts and supporting tools for effects-based operations (EBO) within a coalition environment involving stability operations with increasing levels of conflict in order to assist the development of future processes, organizations and technologies at the operational level of command.



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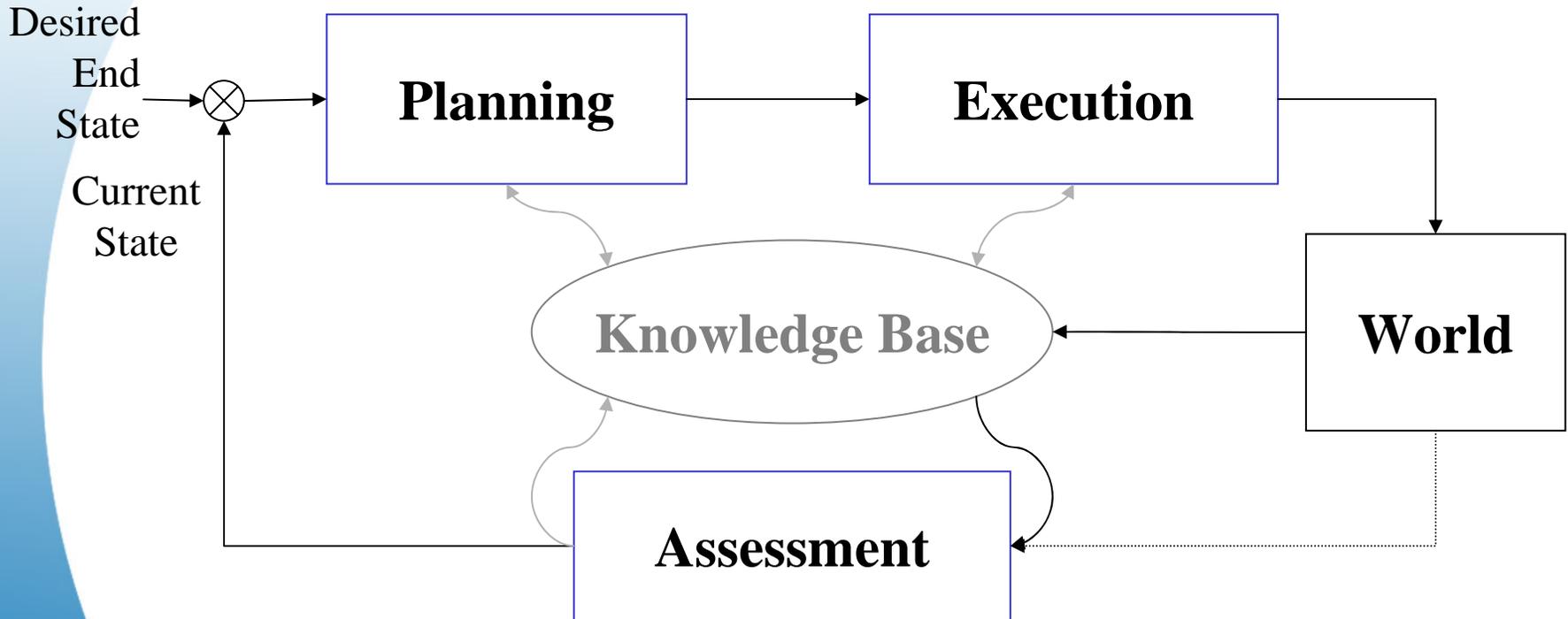
EBAO POT

EBAO can be decomposed in terms of:

1. **P**rocess
2. **O**rganization
3. **T**echnology



EBAO Processes for MNE 4 (Dr. Phil's view)



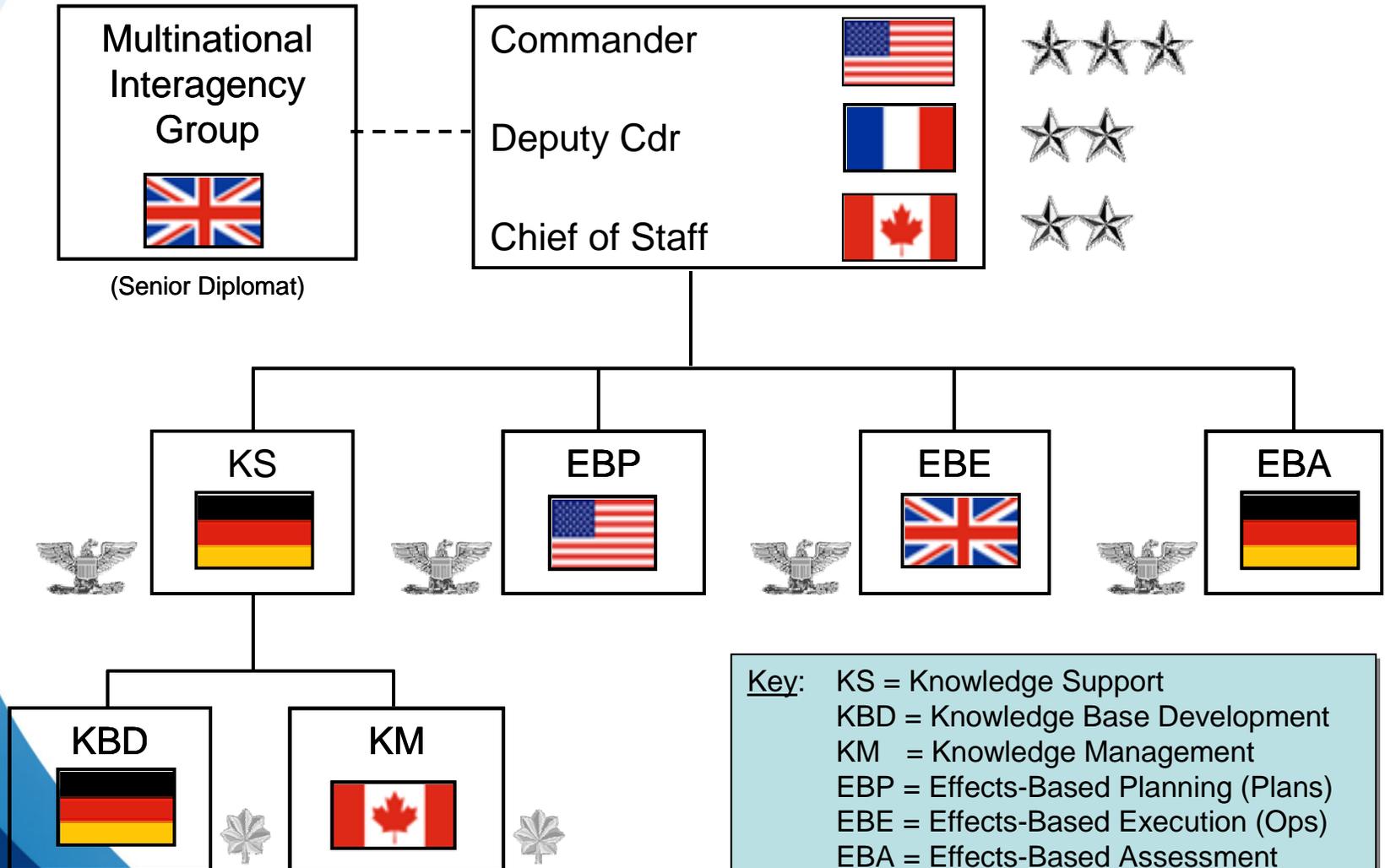
Desired End State

A secure environment (first 8 days)

Humanitarian assistance (last 7 days)



EBAO Organization for MNE 4



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EBAO Technologies for MNE 4

CDCIE Portal

Welcome to eXo Platform - Microsoft Internet Explorer provided by MNE4

File Edit View Favorites Tools Help

Address <http://portal.je.mne4.us/portal/faces/private/ebp001/COMMAND%20LEVELS>

BannerPortlet

Home > COMMAND LEVELS >>

Home
Site Map
CDCIE DESIGN AREA >>
COMMAND LEVELS >>
CTF STAFF >>
EXPERIMENT CONTROL >>
FUNCTIONAL STAFF >>
KNOWLEDGE REQUEST
NEWS
SYNTHESIS TEAM
SUPPORT >>
WEATHER
Logout

Group_Calendar

HIGHER HEADQUARTERS
CTF COMMAND GROUP
COMPONENTS >>
CTF RED
CTF GREEN

January 2006						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

COMMAND LEVELS

COMMAND LEVELS

Up Back to /mne4/COMMAND_LEVELS Search New directory Upload Move Copy Delete Rename Email Web folder

Location: /mne4/COMMAND_LEVELS/

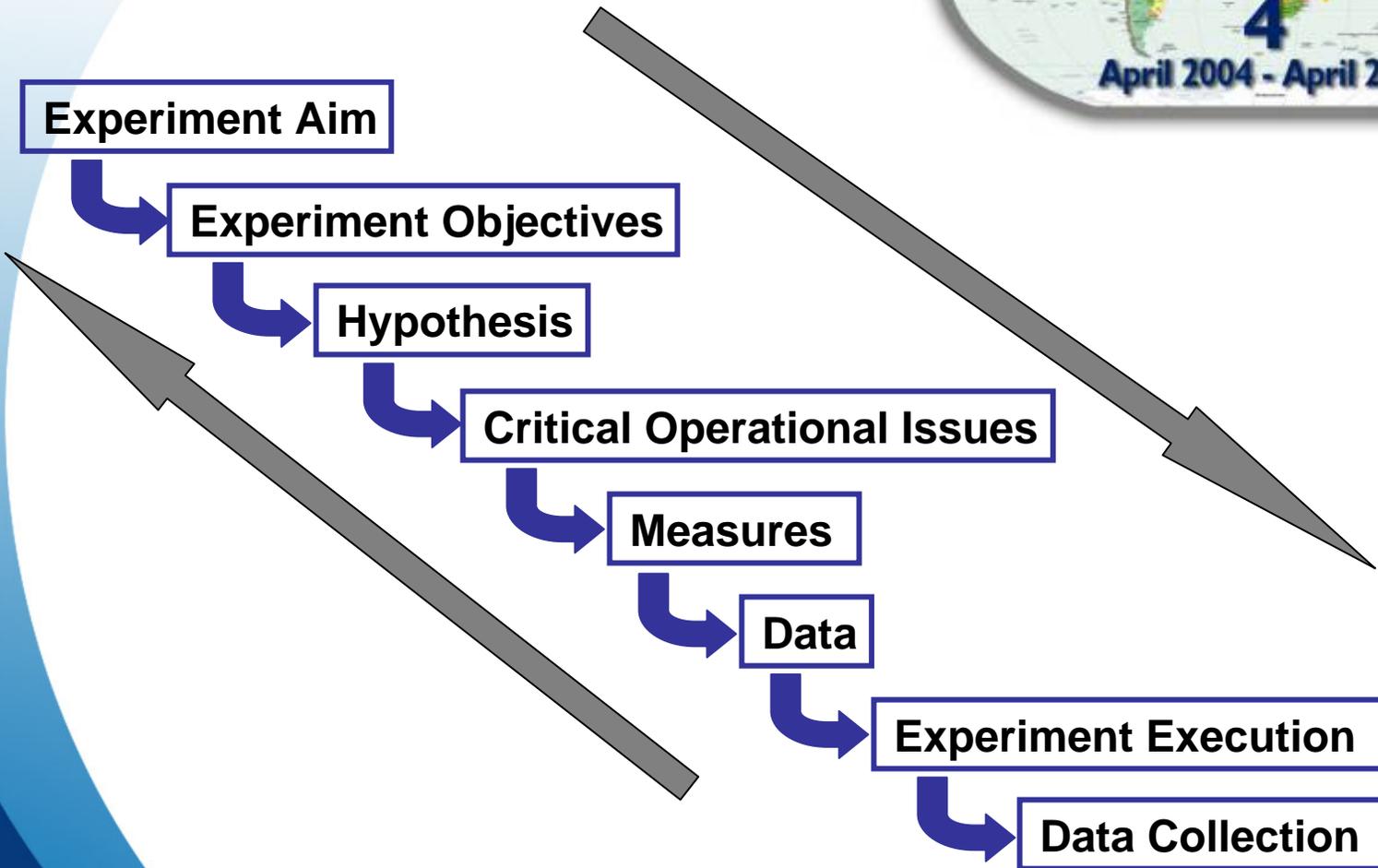
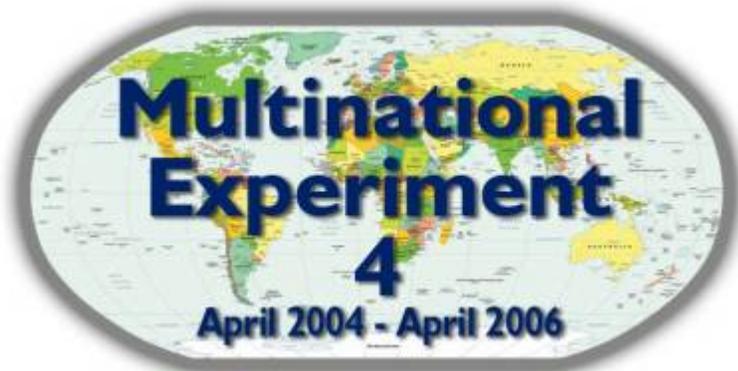
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<input type="checkbox"/> COMPONENTS							<input type="radio"/>		34MB	1/9/06 11:25
<input type="checkbox"/> CTF GREEN							<input type="radio"/>		0B	12/20/05 4:10
<input type="checkbox"/> CTF RED							<input type="radio"/>		0B	12/20/05 4:09
<input type="checkbox"/> CTF_COMMAND							<input type="radio"/>		20MB	11/17/05 1:32
<input type="checkbox"/> HIGHER HEADQUARTERS							<input type="radio"/>		141KB	11/16/05 8:06

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Select All Unselect All



Experiment Analysis





Experiment Design

To Assess and Refine EBAO POT

- 3 week event
- Four major process phases EBP, EBE, EBA, KBD
- Two Headquarters: CTF and NRF
- Collaborative tools and Portal
- **Two Desired End States**

**EB Plan 1 Development
(Sep 05 – Jan 06)**

**Execution
Week 1**

**Execution
Weeks 2-3**

CTF

Knowledge Base Development		
EB Plan 1 Planning	EB Plan 1A Plng	EB Plan 2 Plng
	EB Plan 1 Exe	EB Plan 1 / EB Plan 1A Exe
	EB Plan 1 Assess	EB Plan 1 / 1A Assess

NRF

Knowledge Base Development		
EB Plan N Planning	EB Plan NA Plng	EB Plan R Plng
	EB Plan N Exe	EB Plan N / EB Plan NA Exe
	EB Plan N Assess	EB Plan N / NA Assess

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CFEC Battlelab – MNE4





Critical Operating Issues

Knowledge base development (GE)
Effects-based planning (US)
Effects-based execution (US)
Effects-based assessment (US)

Process

Headquarters organization (UK)

Organization

Technical environment (SE)

Technology

Strategic context (FR)

Multinational interagency group (AU/US)

Knowledge management (CA)

Information operations (GE)

Intelligence (FI)

Logistics (US)

Medical (US)

Common Intent (CA, Dr. Phil)

Culture (CA)

Supporting concepts

Human Factors (US)



Common Intent Survey

(Not at all) 1 2 3 4 5 6 7 (Completely)

Explicit Intent:

- To what extent do you (an observer) believe that the sub-team understood the Commander's orders and guidance?

Implicit Intent

- To what extent do you (a player) believe staff B's actions are consistent with the Commander's intent?
- To what extent do you (a player) believe the staff A's actions are consistent with staff B's actions?



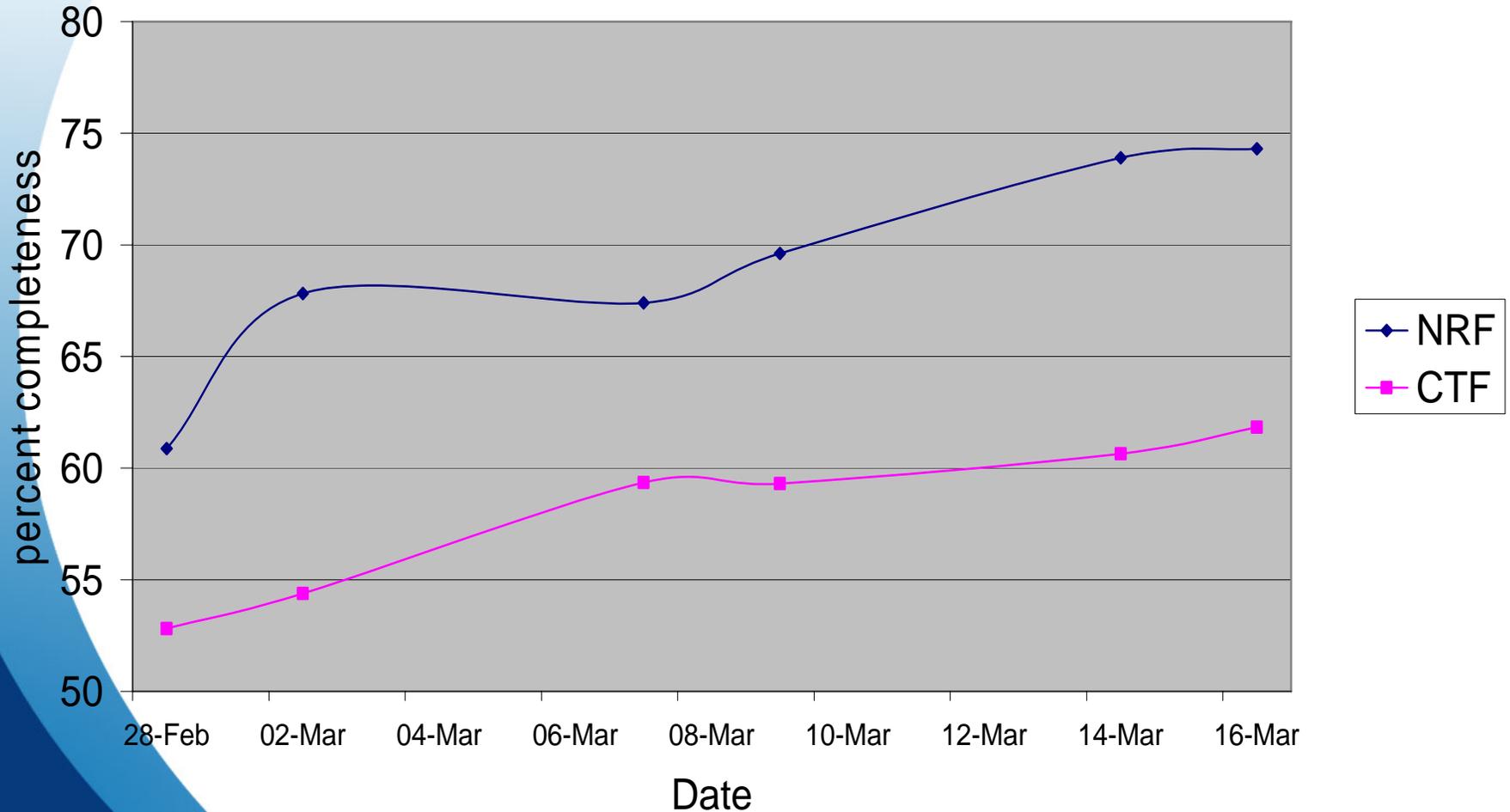
Results and Discussion

- Common Intent and the Sports Analogy
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Explicit Intent Results

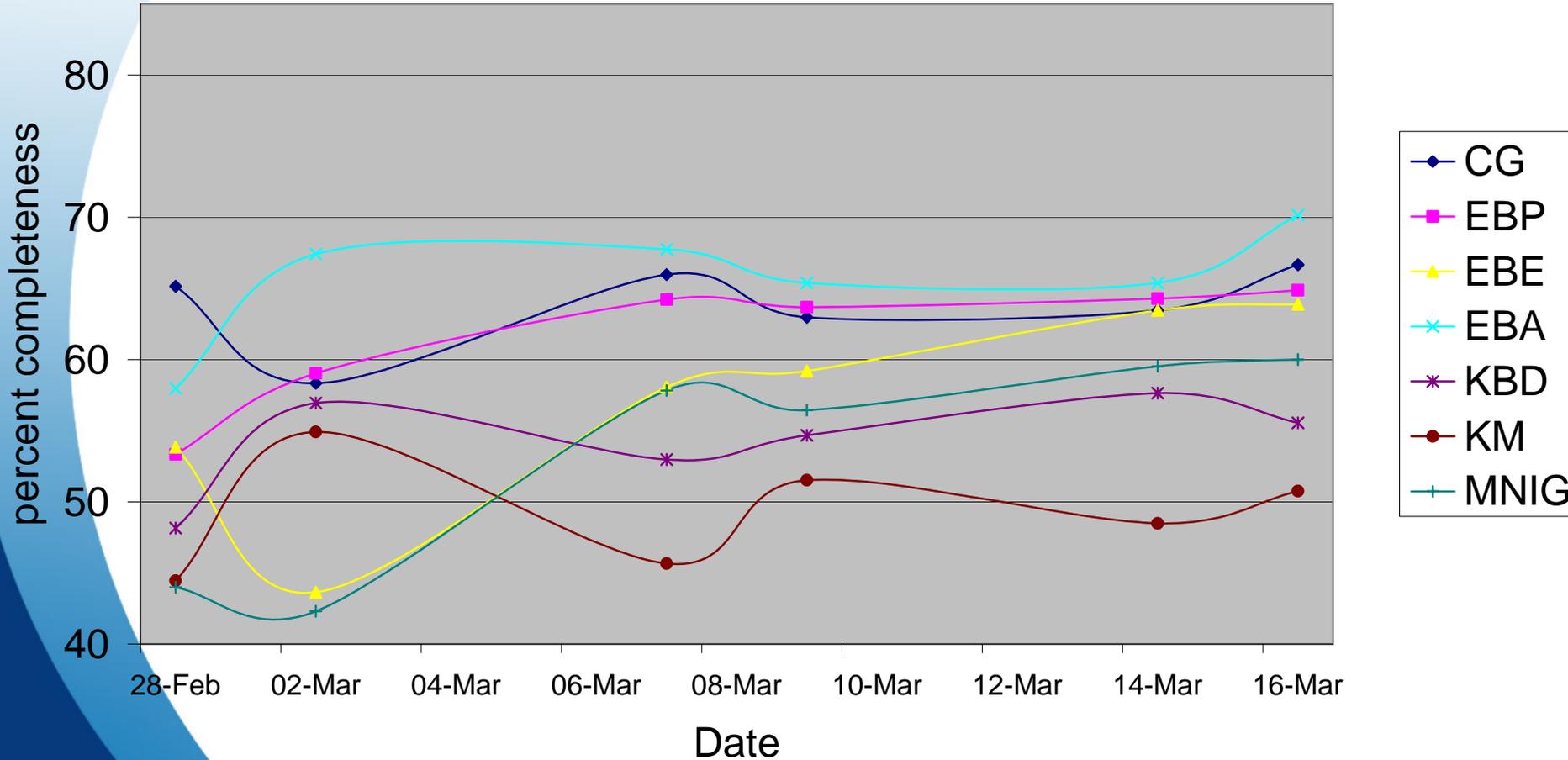
Explicit Intent over time





Explicit Intent CTF Results

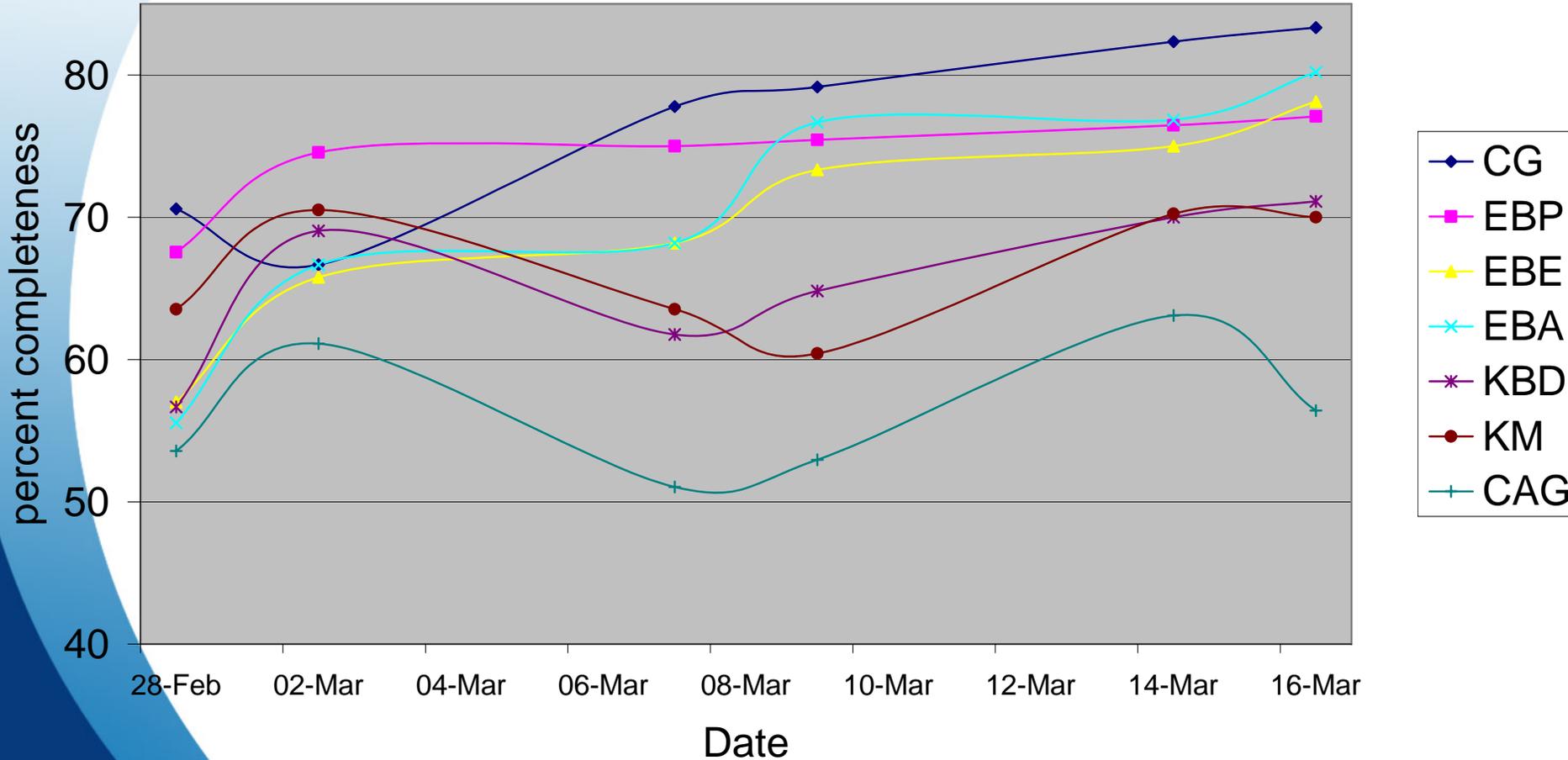
CTF Explicit Intent over time





Explicit Intent NRF Results

NRF Explicit Intent over time





Explicit Intent and Roles and Responsibilities

Date	13 Mar	14 Mar	15 Mar	16 Mar
Question	R&R1	EI	R&R2	EI
NRF	75	74	50	74
CTF	68	61	38	62

- **Explicit Intent is related to a global understanding of Roles and Responsibilities.**
 - This understanding may be essential to the success of any operation.

EI – To what extent do you (an observer) believe that the sub-team understood the Commander's orders and guidance?

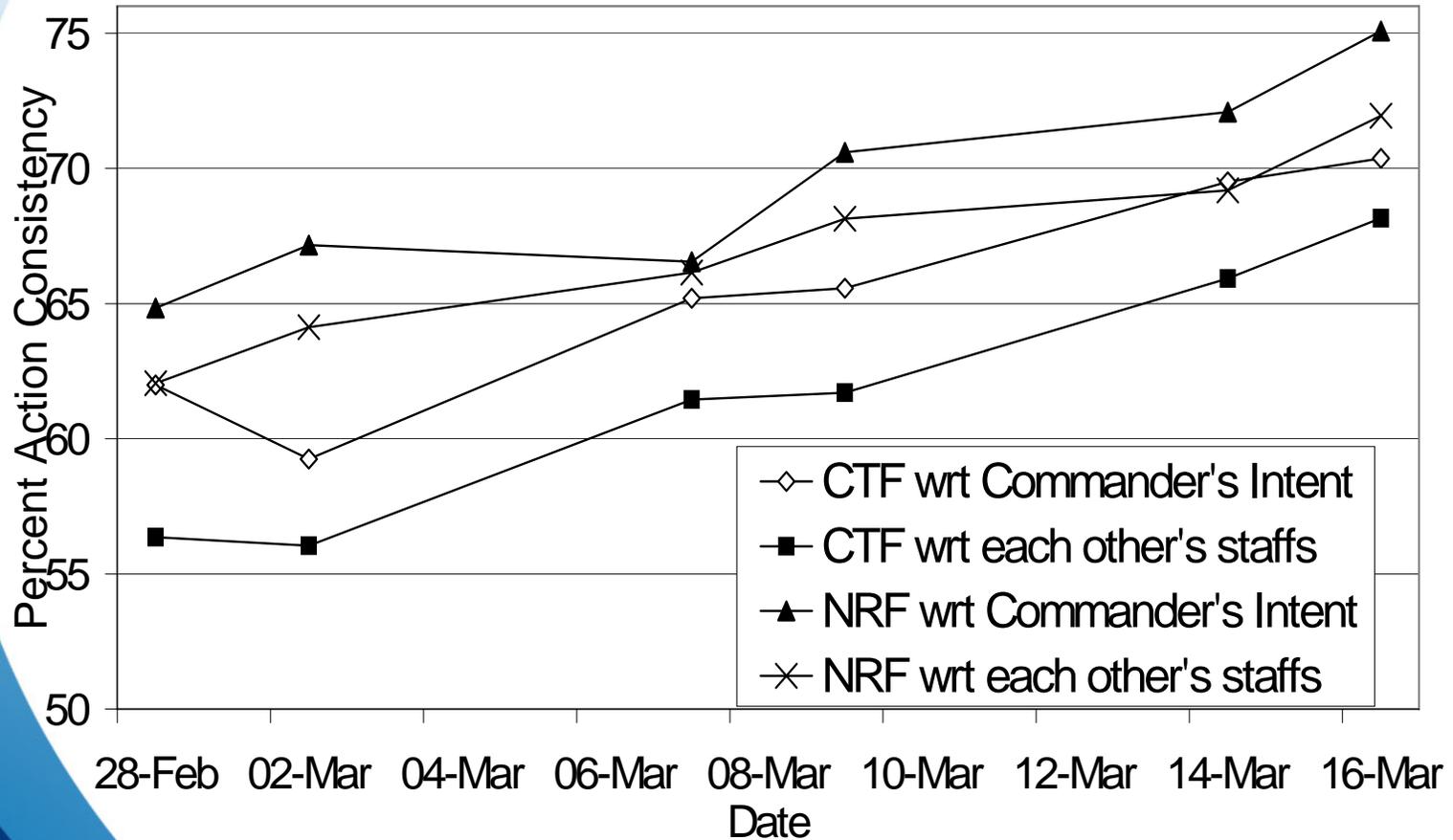
R&R1 – rate the extent to which your team was effective in assigning specific responsibilities to members (every person knew what to do)?

R&R2 – rate the extent to which The CONOPS in combination with the job descriptions appropriately describes how to conduct the tasks for which I am responsible (KBD staff only)?



Implicit Intent Results

Implicit Intent





Implicit Intent and Decision Making

Correlation between	II 1 & DM	II 2 & DM
NRF	-0.92	-0.97
CTF	-0.42	-0.51

- **Implicit Intent is related to decision-making**
 - If Implicit Intent is high then decision-making will be “good”. In order to ensure high Implicit Intent, then staffs’ expectations, training, values, and culture need to be designed/managed.

II 1 – To what extent do you (on staff A) believe staff B’s actions are consistent with the Commander’s intent?

II 2 – To what extent do you believe the staff A’s actions are consistent with staff B’s actions?

DM - Rate your mental demand (includes thinking, remembering, searching, deciding)?



Conclusions

- A relationship between Team Information Processing and Common Intent was postulated using Perceptual Control Theory
- EI and Roles and Responsibilities were directly related to each other
- II and decision-making seem to be related as predicted by the model.
- MNE 4 provided an excellent opportunity to mature CI concepts in a complex environment.
- It is recommended that a limited objective experiment be designed towards calibrating the CI measurement.

Questions?

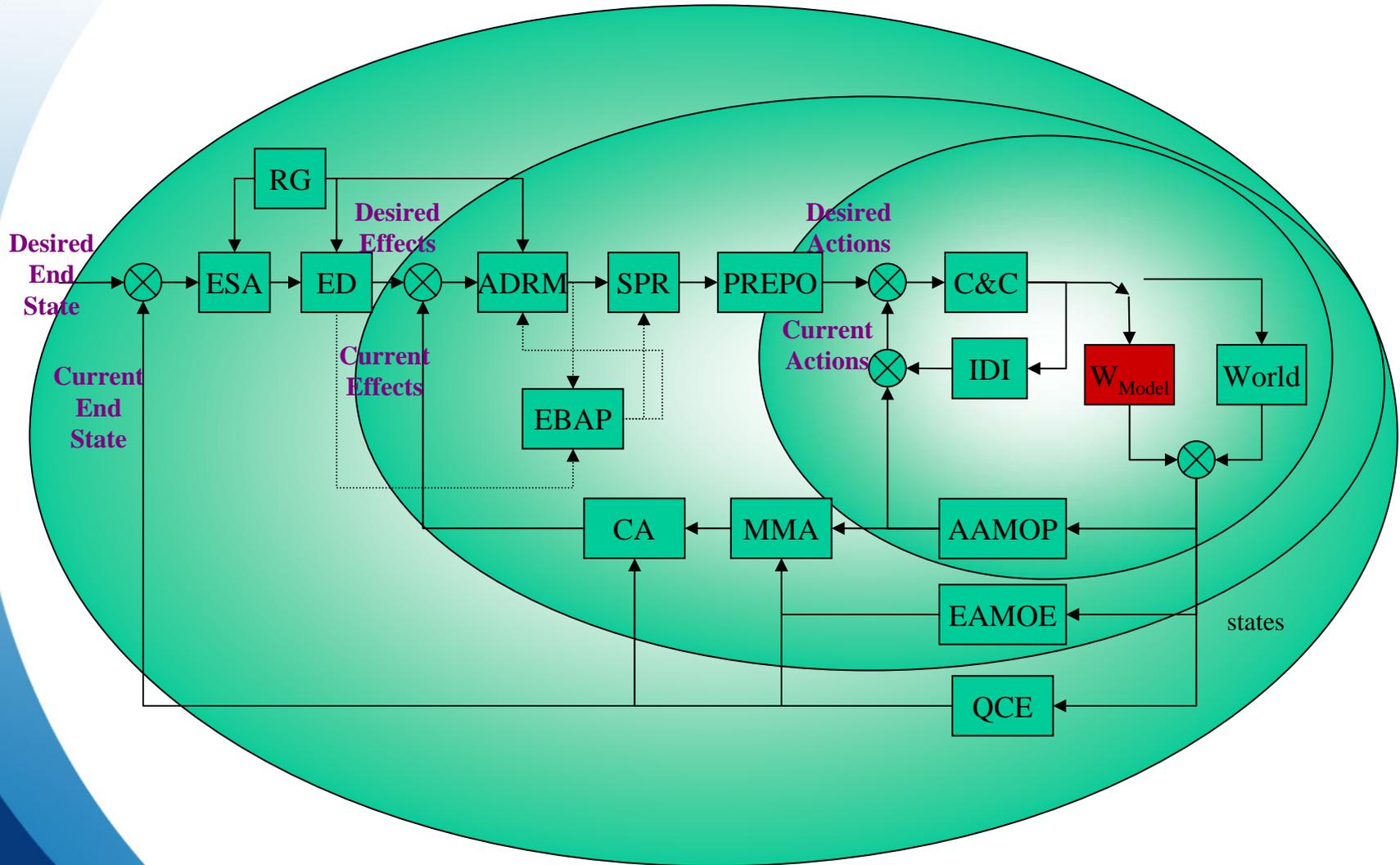


“As the Centre of Excellence for Joint CD&E, CFEC will lead the exploration of emerging concepts and the experimentation of capabilities that support CF transformation.”

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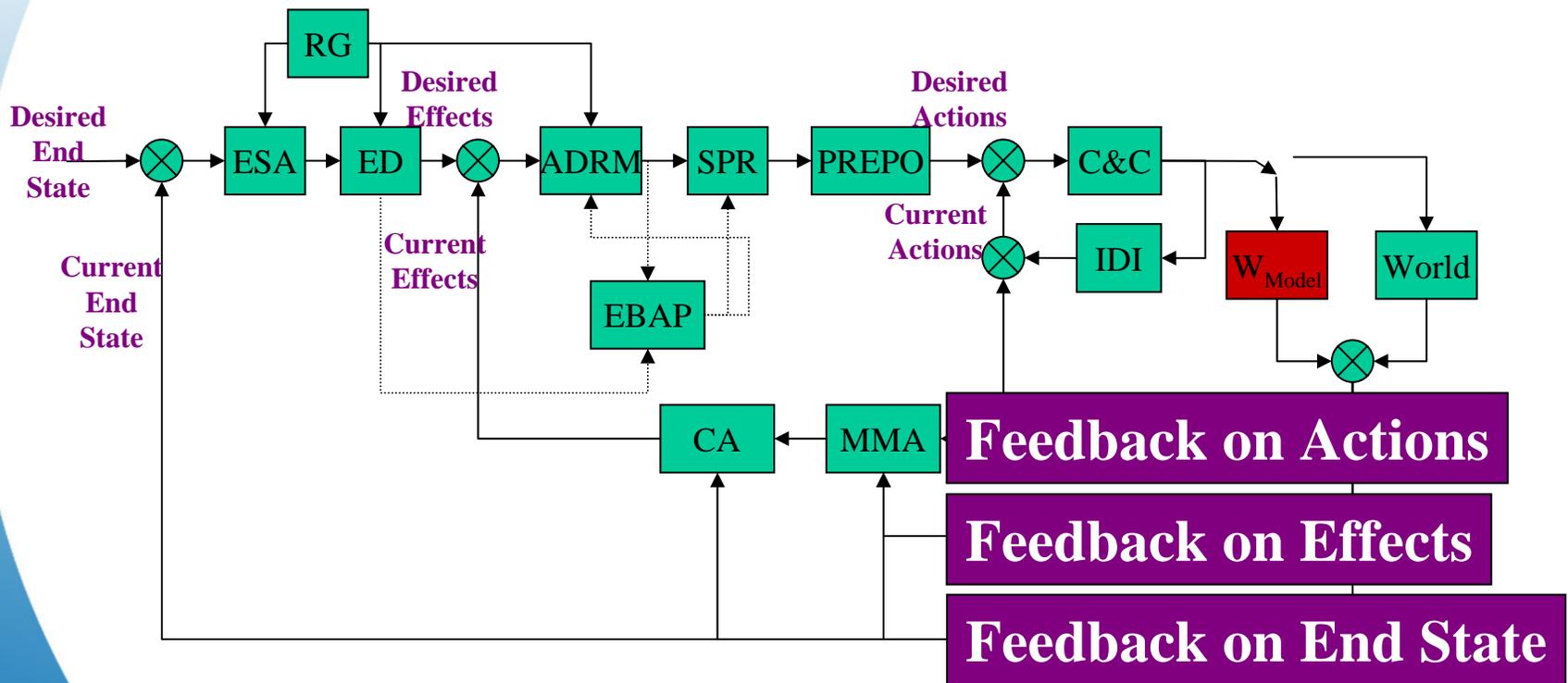


Control Theory Implications for EBAO





Control Theory Implications for EBAO





Control Theory Implications for EBAO

Feedforward Control Disturbance Rejection

